1907 (5) I

Allen & Hanburys'
"PERFECTED"
Cod-liver Oil

The Title "PERFECTED" *has been applied to this preparation for the following reasons:*

1. It is manufactured by our own Workmen at our Factories in Norway.
2. Only perfectly fresh and carefully selected Livers are used.
3. It is prepared by such a process that while none of its valuable properties are impaired, yet it is free from any nauseous flavour.

The *LANCET* writes—"The 'Perfected' Cod Liver Oil is as nearly tasteless as Cod Liver Oil can be. Many to whom the taste has hitherto been an obstacle will doubtless be able to take it."

The *BRITISH MEDICAL JOURNAL* writes—"A Cod Liver Oil which is so delicate in flavour as to be free from all the usual nauseous properties of fish oil, and has almost the delicacy of Salad Oil."

The *MEDICAL PRESS AND CIRCULAR* writes—"No nauseous eructations follow after it is swallowed."

The *LONDON MEDICAL RECORD* writes—"Limpid, delicate, and free from disagreeable flavour, the 'Perfected' Cod Liver Oil will henceforth take its place as a pharmaceutical product which is in its way unrivalled."

NOTICE.—The "Perfected" Cod Liver Oil is Sold ONLY in Capsuled Bottles, bearing ALLEN & HANBURYS Signature, at (retail) 1/4, 2/6, 4/9 and 9/-.

BYNIN EMULSION
The "PERFECTED" Cod Liver Oil,

AND THE

Hypophosphites of Lime & Soda with Extract of Malt.

There are some persons who cannot endure the sensation of having oil in the mouth, although, as in the case of our "Perfected" Cod Liver Oil, it is practically tasteless and without smell. For such patients the Emulsion will prove a great boon; for though it contains a large proportion of Oil, this is so completely disguised as to be imperceptible to the palate. The flavour is extremely delicate, and the Emulsion is so thoroughly made that even after standing for a considerable time there is no tendency for the Oil to separate. By combining the solution of the Hypophosphites of Lime and Soda, the medicinal value is increased.

The *LANCET* writes—"Quite tasteless as regards Cod Liver Oil. Possesses a very agreeable flavour."

The *BRITISH MEDICAL JOURNAL* writes—"An excellent preparation. . . . Can be readily taken by the most fastidious palate."

The *MEDICAL PRESS AND CIRCULAR* writes—"A perfectly stable emulsion."

Sold only in Capsuled Bottles (retail) 1/4, 2/6, 4/9 and 9/-.

Samples to Medical Men free on application to

ALLEN & HANBURYS, Plough Court, Lombard Street, LONDON, E.C.

West End House—VERE STREET, CAVENDISH SQUARE, W.
Laboratories and Warehouse—BETHNAL GREEN, LONDON, E.
Cod Liver Oil Factories—LONGVA and KJERSTAD, NORWAY.
Depot for AUSTRALIA—484, COLLINS STREET, MELBOURNE.

Bynin

SUPERSEDES ALL OTHER FORMS OF MALT EXTRACT.

Sold in Bottles at 1/9 and 3/- each.
16/- and 27/- per doz. to the Profession.
Samples Free on application.

BYNIN is a highly concentrated LIQUID Extract of Malt, free from the troublesome viscidity or treacle-like consistence of the preparation usually met with. It is a valuable article of diet, and is largely prescribed in digestive disorders, and wherever it is desired to improve assimilation, as in the wasting diseases of children, Phthisis, &c. Given with or immediately after a meal, it facilitates the digestion of Farinaceous Foods.

The *Lancet* writes: "An active Malt essence. . . We find that one ounce of Bynin will digest perfectly one pound of starch. This is a most favourable result, and coupled with the fluidity and pleasant flavour renders this preparation a most valuable one."

☞ **One Fluid Ounce of Bynin represents One Ounce by Weight of Allen & Hanburys' Ordinary Thick Malt Extract, which is sold in wide mouthed jars, similar to their Bynol jars at 1/6 & 2/9 ea.**

Byno-Hypophosphites

Is a neutral solution of the Hypophosphites of Iron, Manganese, Calcium and Potassium, to which are added the Alkaloids of Cinchona and Nux Vomica. The whole being in combination with Bynin, our Liquid Extract of Malt.

☞ The Alkaloids are present as they are found in the plants from which they are derived, that is in combination with the natural acids, and in this condition are believed to be more readily assimilable.

Sold in Bottles at (Retail) 2/6 & 4/6 each. 24/- & 48/- per doz. to the Profession.

Byno-Pancreatin.

A fluid extract of the ferments and other constituents of the Pancreas in combination with the nutritive and digestive components of Malt. It is especially valuable in peptonizing milk and other foods. Full directions accompany each Bottle.

In Bottles at (Retail) 2/-, 3/6 & 6/6 each. 18/-, 32/- & 58/- per dozen to the Profession.

Byno-Pepsin.

This is a solution of Pepsin in combination with "BYNIN" (Liquid Malt). It thus affords, in a highly active and agreeable form, the agents required for the digestion of both animal and farinaceous food. This solution possesses the advantage of preserving its activity unimpaired for long periods.

Sold in 4, 8 and 16 oz. Bottles, at (Retail) 2/6, 4/6 & 8/-, or 23/-, 41/- & 72/- per dozen to the Profession.

Coca-Bynin.

A combination of BYNIN with the active principle of the leaves of Erythroxylon Coca, possessing all the valuable nutritive and diastatic properties of Malt together with the extraordinarily stimulating and exhilarating effects of the Coca plant. It may be used for the extemporaneous preparation of Coca Wine. It is very palatable.

In Bottles at (Retail) 2/6. 24/- per dozen to the Profession.

Samples of any of the above will, on application, be supplied to Medical Men resident in Great Britain.

ALLEN & HANBURYS, Plough Court, Lombard Street, LONDON, E.C.

West End House—VERE STREET, CAVENDISH SQUARE, W.
Laboratories and Warehouse—BETHNAL GREEN, LONDON, E.
Cod Liver Oil Factories—LONGVA and KJERSTAD, NORWAY.
Depôt for AUSTRALIA—484, COLLINS STREET, MELBOURNE.

MEDICATED THROAT PASTILLES.

THESE Pastilles are introduced as an improvement on the ordinary hard, rough and angular Lozenges, fragments of which often irritate the mouth, when in an inflamed or ulcerated condition. Having as their basis Pâte de Jujube, they are soft and demulcent in themselves, whilst their rounded form and, in most instances, agreeable flavour make them valuable substitutes for the Lozenges now in common use.

1. MORPHIA. (1-40th of a grain.)
   Adult dose: From 6 to 10 daily.
2. IPECACUANHA. Readily taken by children These pastilles are of the same strength as the B.P. lozenges.
3. MORPHIA AND IPECACUANHA. (1-40th grain Morph. and 1 grain Ipec.) Adults may take one every 2, 3, or 4 hours.
4. COMPOUND MORPHIA AND IPECACUANHA. A more active remedy than No. 3 (1-40th grain Morph., 1-5th Ipec., 1-5th Squills, &c.)
   For adults, one every 2, 3, or 4 hours.
5. OPIUM AND BELLADONNA. An agreeable substitute for, and containing the same amount of Opium as the lozenges of the British Pharmacopœia.
6. ACONITE. Each Pastille equivalent to half a drop of the B.P. Tincture.
   Adult dose: One every 2, 3, or 4 hours.
7. COMPOUND CAMPHOR or VOICE.
   Adult dose: From 3 to 6 or 8 at intervals during the day.
8. CHLORATE OF SODA. May be taken whenever the throat is uneasy.
10. BENZOATED VOICE. Useful to public speakers, &c. Less active than the Compound Camphor.
    1 or 2 may be taken shortly before any exertion of the voice.
11. CHLORATE OF POTASH. A more agreeable form than the lozenge of the Pharmacopœia.
    Dose: From 6 to 12 daily.
13. RHATANY. Astringent.
    Dose: 6 to 12 daily, at intervals.
14. TANNIN. Astringent, and of the same strength as the Tannic Acid lozenges B.P.
15. CARBOLIC ACID. Antiseptic and stimulant. Dose: One to be taken every 2, 3, or 4 hours.
16. BROMIDE OF AMMONIUM.
    Dose: One every 2, 3, or 4 hours.
17. CHLORATE OF POTASH AND BORAX. Containing these two useful remedies in combination.
    Dose: One to be taken frequently.
18. BORAX. Dose: One to be taken frequently.
19. CHLORIDE OF AMMONIUM. Expectorant. Dose: One to be taken frequently.
20. GUAIACUM. (2 grains of Guaiacum in each.) Dose: One every 2 hours.
21. IODOFORM. (½ grain of Iodoform in each). Dose: One every 2, 3 or 4 hours.
22. RED GUM. Astringent.
    Dose: One may be taken frequently.
23. EUCALYPTUS. Antiseptic and stimulant. Dose: One to be taken frequently.
24. COCAINE. (1-10th and 1-20th grain.) Sedative to the mucous membrane.
    Dose: One every 3 or 4 hours.
25. SEDATIVE & ASTRINGENT. (Morp. 1-40th grain. Red gum 2 grains.)
    Dose: One every 2 or 3 hours.
26. CODEINE. (⅛th gr. Codeine.) Sedative.
    Dose: Six may be taken during the day.
27. COMPOUND EUCALYPTUS. (Red Gum, Chlorate of Potash, and Cubebs.)
28. COMPOUND GUAIACUM (Guaiacum, Chlorate of Potash, and Red Gum).
29. COMPOUND RHATANY. (2 grains of Extract of Rhatany and 1-10th grain of Hydrochlorate of Cocaine).
    Dose: From 4 to 6 a day.
30. BORACIC ACID. (1 grain.)
31. RED GUM AND COCAINE. (Containing Red Gum and 1-20th grain of Hydrochlorate of Cocaine.)
32. RED GUM AND CHLORATE OF POTASH. Astringent.
33. RHATANY AND CAPSICUM. (2 grains of Extract of Rhatany.)
    Dose: From 4 to 6 a day.
34. TEREBENE. (2 minims of Terebene.)
    Dose: From 4 to 6 a day.
35. JABORANDI. (½ gr. Extract in each.)
36. PUMILIO PINE.
37. LETTUCE AND BORAX. (Ext. Lactucæ gr. ½. Pulv. Boracis, gr. ij. in each.)
38. COCAINE, CHLORATE OF POTASH AND BORAX. For tickling and irritation of the throat.
39. LACTIC ACID. (2 minims of Lactic Acid in each.)
    Dose: One may be taken frequently.
40. COCA. (Containing 2½ grs. of Coca Extract in each.)
    Dose: One every 3 or 4 hours.
41. EUCALYPTUS OIL. Antiseptic and stimulant. Dose: One every 2 or 3 hours.
42. KOLA. Stimulating and tonic.
    Dose: One may be taken frequently.
43. MENTHOL. (1-20th grain in each.) Stimulant and antiseptic.
    Dose: One when required.
44. MENTHOL AND COCAINE. (1-20th grain of each in a pastille.) Stimulant, antiseptic and sedative. Dose: One may be taken 3 or 4 times a day.

Sold in tin boxes containing 3 ounces, to Retail at 1/- each or 8/- per doz. to the Profession; also in 1-lb. bottles at 3/- each.

ALLEN & HANBURYS, Plough Court, Lombard Street, LONDON, E.C.

West End House—VERE STREET, CAVENDISH SQUARE, W.
Laboratories and Warehouse—BETHNAL GREEN, LONDON, E.
Cod Liver Oil Factories—LONGVA and KJERSTAD, NORWAY.
Depot for AUSTRALIA—484, COLLINS STREET, MELBOURNE.

Compressed Tabellæ.

MANUFACTURED BY

ALLEN & HANBURYS.

The main advantages of using many drugs in the form of Tabellæ are as follow—

(*a*) They are very **portable.**
(*b*) They are readily **swallowed.**
(*c*) They are quickly **dissolved** or **disintegrated,** thus insuring the speedy action of the drug.
(*d*) The doses are exactly measured.
(*e*) For Medical Men who do their own dispensing, their advantages are obvious in the saving of much time and trouble.
(*f*) The Drugs are of guaranteed purity.

Those formed of medicaments, generally applied to the mouth and throat, are made as heretofore, to dissolve slowly; the affected surfaces are thus constantly brought into contact with a solution of the Remedy. Those made of sparingly soluble substances such as **Bismuth, Sulphonal,** &c., are so prepared as to readily **disintegrate** on coming in contact with moisture.

When first introduced by us the importance and superiority of these **Disintegrating Tabellæ** was quickly recognised, as is shown by the number of would-be imitations now offered for sale. Not having patented our improvement we can only rely on the goodwill of the profession to help us to reap the fruits of our invention, and physicians desiring to prescribe Tabellæ of our manufacture can signify the same by the addition of the initials "A. & H." which, for convenience in prescribing, we have registered as a Trade Mark, thus: ℞. Tab. Sulphonal. A. & H.

A FEW OF THE MORE IMPORTANT TABELLÆ ARE—

Acid Arseniosi, 1-100 gr.
Aloin, 1-10, 1-4, 1-2 gr.
*Aloin Co.
*Aloin Co. *c.* Cascara.
Ammon Bromid.
Ammon Chlorid.
Ant. Acid.
Antifebrin.
Antipyrin.
Bismuth S da et Zingib.
Calomel, 1-10, 1-4, 1 2, j gr.
*Cascara Extract, ij gr.
Conf. Aromat. *c.* Opio.
Exalgine.
*Hydrarg. *c.* Creta.
Ipecac. Co.
*Laxative.
Morphiniæ Mur.
Morphiniæ Sulph.
*Pepsin.
*Peptonic.
Potass Chlor.
Potass Permang.
*Quininiæ, gr. 1-10 to gr. v.
Rhei Co Pulv.
Rhei Sodæ et Zingib
Rhinitis (*Central Th. Hosp.*)
Saccharin.
Salipyrin.
Salol.
Santonin et Calomel. aa gr. j.
Sodæ Bromide.
Sodæ Chlor.
Sodæ Salicylat.
Strophanthus Tinct., mij.
Sublimate.
Sulphonal.
Sulphur Co.
Voice (Pot. Chlor. Borax et Cocaine).
*Warburgii (Tinct. mxxx).

IN compliance with the popular demand for medicines in a palatable and convenient form, we are coating with sugar all those Tabellæ containing bitter and nauseous medicines, such as **Aloin, Cascara, Quinine, Laxative,** etc. (marked with an Asterisk.) No bitterness is perceived when swallowed, and these valuable, though nauseous, remedies are thereby taken not only without distaste, but with pleasure.

CASCARA TABELLÆ (SUGAR COATED).

All Tabellæ are supplied in Vinaigrette Bottles for the pocket at 1-, 2 6, and 4 6 each, *also in bulk.*

Full List and Samples Free to the Profession on application.

ALLEN & HANBURYS, Plough Court, Lombard Street, LONDON, E.C.

West End House—Vere Street, Cavendish Square, W.
Laboratories and Warehouse—Bethnal Green, LONDON, E.
Cod Liver Oil Factories—Longva and Kjekstad, NORWAY.
Depot for AUSTRALIA — 484, Collins Street, MELBOURNE.

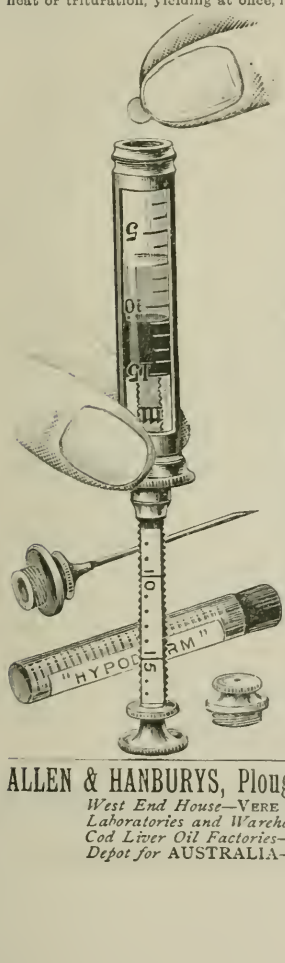
Hypoderms

Is the name ALLEN AND HANBURYS have applied to their **Compressed Tabellæ** of drugs for

HYPODERMIC MEDICATION.

FOR convenience in administering a great variety of drugs by hypodermic injection, our HYPODERMS will be found unsurpassed, and have within the last few months been still further greatly improved. They dissolve in water almost *instantaneously, no trituration* or *heat* being required. The dose is exactly known. The drug is in its purest form. Provided that the Syringe and Needle are kept quite clean, and that distilled water is used, no subcutaneous irritation or inflammation can follow their use. The drug, being combined with a non-hygroscopic base, preserves its active properties unimpaired for any length of time.

The *Lancet* writes:—"The following advantages claimed for the 'Hypoderms' are found to be perfectly true—they dissolve easily and rapidly in a minimum of water without the aid of heat or trituration, yielding at once, if preferred, in the syringe itself a uniform solution of the drug; whilst, of still greater import, they contain, according to analysis, the exact amount of active ingredient they are stated to contain." (See rest of article for exact analysis of Hypoderms, June 6th, 1891).



LIST OF HYPODERMS.

Acidum Sclerotinicum	1-2 gr.
Aconitina	1-200 gr.
Apomorphinæ Hydrochloras	1-20 gr.
Atropinæ Sulphas	1-60, 1-100 gr.
*Caffeinæ Sodio-Salicylas	1-2 gr.
Cocainæ Hydrochloras	1-8, *1-4, *1-2 gr.
Digitalinum	1-100 gr.
{Digitalinum	1-100 gr.
{Morphinæ Sulphas	1-8 gr.
Ergotinia	1-200, 1-100 gr.
Eserinæ Salicylas, *vide* Physostigmina.	
Gelseminæ Hydrochloras	1-50 gr.
Homatropinæ Hydrobromas	1-200 gr.
Hyoscinæ Hydrobromas	1-200, *1-100 gr.
Hyoscyaminæ Sulphas	1-50 gr.
Hydrargyri Perchloridum	1-20 gr.
Morphinæ Sulphas	1-8, 1-6, 1-4, 1-3, *1-2 gr.
{Morphinæ Sulphas	1-8 gr.
{Atropinæ Sulphas	1-200 gr.
{Morphinæ Sulphas	1-6 gr.
{Atropinæ Sulphas	1-180 gr.
{Morphinæ Sulphas	1-4 gr.
{Atropinæ Sulphas	1-40 gr.
{Morphinæ Sulphas	1-3 gr.
{Atropinæ Sulphas	1-120 gr.
Morphinæ Tartras	1-8, 1-4 gr.
Physostigminæ Salicylas	1-100 gr.
Picrotoxinum	1-100 gr.
Pilocarpinæ Hydrochloras	1-10, *1-2 gr.
Quininæ Hydrobromas	1-2 gr.
Sparteinæ Sulphas	1-2 gr.
Strychninæ Sulphas	1-100, 1-60 gr.

Other strengths and formulæ are frequently added, and can be made to order. *Put up in small tubes containing 20 Hypoderms in each, except those marked with an asterisk, which contain* 12, *at* 1*s. each, or* 10*s. per dozen tubes.*

☞ The Hypoderms may be dissolved in the Syringe itself, ensuring absolute accuracy of dose, and saving of time to the practitioner.

Hypodermic Syringes and Cases in great variety. Any special form not in stock made to order. Fittings altered to suit individual taste.

— FULL PRICE LIST ON APPLICATION. —

Physicians desiring to prescribe HYPODERMIC TABELLÆ as manufactured by ALLEN & HANBURYS, are requested to use their term "HYPODERM," and to add the initials "A. & H."

Samples of Hypoderms sent post free to medical men on application.

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West End House—VERE STREET, CAVENDISH SQUARE, W.
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Cod Liver Oil Factories—LONGVA and KJERSTAD, NORWAY.
Depot for AUSTRALIA—484, COLLINS STREET, MELBOURNE.

"Mountain Zinfandel:"

A REALLY CHOICE CALIFORNIAN RUBY WINE.

EXHIBITING THE BEST PROPERTIES OF CLARET & BURGUNDY.

AT 24s. PER DOZEN BOTTLES.

Direct from the Fountaingrove Vineyards, Santa Rosa, California.

"Mountain Zinfandel" contains all the subtle and invigorating essences of California's glorious sunshine. It excels in the marked manner in which it restores exhausted nervous energy.

The Medical Annual says:—"'MOUNTAIN ZINFANDEL' is more nourishing and vitalising than Wines grown on the phylloxera diseased soils of France. It has neither the acidity of Claret nor the heating properties of Burgundy, and we never prescribed one which has given greater satisfaction to our patients."

Californian Brandy.

AN UNADULTERATED SPIRIT, DISTILLED WHOLLY FROM WINE.

Price 60s. PER DOZEN BOTTLES, CARRIAGE PAID.

This Brandy is distilled at the **"Fountaingrove Vineyards,"** Santa Rosa, California, from Wine made at the Vineyards. It is equal in every respect to the French Brandies of twenty years ago, that is—when they also were distilled from grape wine.

The Medical Annual, 1892, says:—"The Analysis proves that it is a pure grape spirit which the practitioner can safely recommend."

Champagnes.

A. PERNAY & CO., REIMS.

These Wines are 1889 vintage, the "crack" vintage of the century. The Cuvée de Réserve is equal in character and quality to the higher priced "popular" brands.

Cuvée de Réserve	- 66s.	Per Doz.	24 Half Bottles
Pale Dry Sillery	- 45s.	Botts.	4s. extra.

The Medical Annual says:—"We feel justified in saying that it would be impossible to purchase Champagne of the same all-round merit without paying nearly double the price at which these are marked."

Scotch Whisky.

VERY RARE OLD LIQUEUR.
Over 10 years old in Bond.

This is a Blend in Bond, by one of the Grand Masters of Blending, of old and exceptionally rare Whiskies, several of which have been kept in Bond for more than fifteen years.

The Medical Annual says of this:—"It Represents the highest perfection to which the art of Distilling and careful blending can be brought."

Price 48s. PER DOZEN BOTTLES, CARRIAGE PAID.

CASH OR REFERENCE REQUIRED WITH ORDER.

C. W. PEARCE & CO.,

LONDON— 16, MARK LANE, E.C. | *GLASGOW*— 206, WEST GEORGE ST.

ONLY AWARD HEALTH EXHIBITION, PORTSMOUTH, 1892.

HOSPITAL GAZETTE *says*— "We cannot conceive of anything which so well meets all the objections urged against the wearing of Corsets."

MEDICAL ANNUAL, 1892, *says*— "Platinum Anti-Corset. We have given especial attention to this sample (Fig. 65), because it appears to meet all the objections which have been raised to the ordinary form of Corset."

TO ensure exactly the same appearance as if wearing Stays, without danger of Syncope from Tight Lacing, Doctors should recommend the—

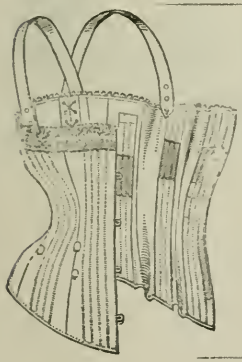
"PLATINUM" ANTI CORSET Patented No. 14796.

A Health Bodice and Corset combined.

High and Low Neck, in a variety of Materials, from 8/6.

Particularly suited for Invalids, and for use before and after Accouchment.

No Steel Busk down Front to press on any vital Organ.



TO those Ladies who may not care for a Corset and Bodice combined, or who are loth to relinquish the ordinary Corset, recommend—

HERTS'S (PATENTED) "HEALTH" (WASHING) FROM 5/11 CORSET,

An ordinary Corset, fitted with "PLATINUM" BONES and BUSKS so arranged that *all are removable in 30 seconds for washing.*

WHAT DOCTORS SAY! "Apart from the 'PLATINUM' ANTI-CORSET, there can be nothing more health-preserving than a Corset which, while giving direct shoulder support, *can be washed* as easily as a handkerchief."

Samples will be sent, POST FREE, for Inspection on application to—

HERTS, SON & CO., Ltd.,

Ridgmount Street, LONDON, W.C.

A. W. REID & Co.,

Manufacturing Sanitary Engineers,

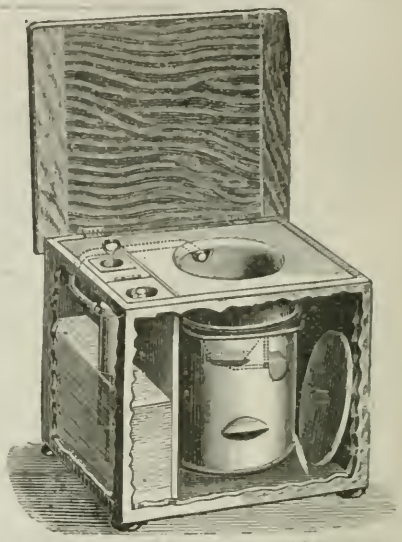
69, ST. MARY AXE, LONDON, E.C.

REID'S

Portable Water Closets

FOR CLEANLINESS, COMFORT AND CONVENIENCE.

In Invalids' Apartments, Country Houses, House Boats, &c.



PRICES.	£	s.	d.
Reid's full size Improved Portable Water Closet, white basin, French polished mahogany case, with door in front	6	0	0
Do. in polished pine case, with mahogany seat, door in front ..	5	0	0
Mahogany Arms to either of the above, *extra*	0	12	0
Blue Printed Basins, *extra*	0	2	0

"ALDGATE" FLUSH DOWN PEDESTAL CLOSET.

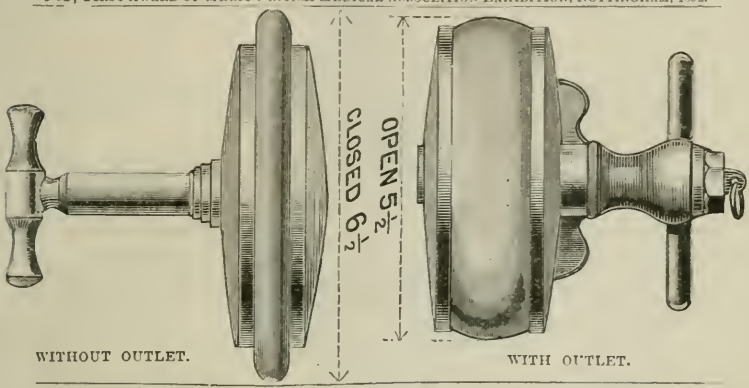
Specially designed to work with a Syphon Cistern, compact in appearance, economical in price.

PRICES.	£	s.	d.
Plain white "Aldgate" Flush Down Pedestal Closet, polished mahogany or walnut seat, syphon cistern, brass chain, porcelain pull, and paper box, complete with brackets for cistern and seat	4	0	0
Do. printed basin .. *extra*	0	5	0
Do printed inside and out, *extra*	0	10	0
Do. with raised ornamentation, as illustration, in plain white .. *extra*	0	7	6
Do. with self-rising seat, *extra*	0	10	0

Gold Medal awarded at the International Health Exhibition, London, 1884.

Jones' Patent EXPANDING SCREW DRAIN STOPPER.

ELEVEN GOLD MEDALS; CERTIFICATE OF MERIT FROM THE SANITARY INSTITUTE OF GREAT BRITAIN, 1892; FIRST AWARD OF MERIT BRITISH MEDICAL ASSOCIATION EXHIBITION, NOTTINGHAM, 1892.



As supplied to the majority of London Vestries, District and Local Boards, all the leading Sanitary Engineers, and to the New South Wales Government, Australia.

The Stopper consists of Two Galvanized Iron Plates or Discs between which a *hollow* rubber ring of special construction is fixed by means of grooves in the plates. The plates are screwed up by a T handle, the rubber expanding quite *an inch*, and will be found to effectually plug any pipe according to size of stopper used. Prices – 4-in. 7/6; 5-in. 10/-; 6-in. 12/-; 9-in. 18/-; 12-in. 28/-. Indicators to register leakage and fall of drain can also be had for attaching to plug with outlet, 12/- each.

JOHN JONES, Patentee and Manufacturer of Sanitary Specialities,
40, SYDNEY STREET, CHELSEA, LONDON, S.W.

"NEW INVENTION."
SHOULD BE PRESCRIBED FOR ALL SMOKERS.

DR. JONES'S

"THERAPEUTIC" PIPE

CIGAR AND CIGARETTE MOUTHPIECES OR HOLDERS.

PRESS OPINIONS:—

"*The Lancet*" says of it:—"In the 'Therapeutic Pipe,' principles for the removal of nicotine are carried into practical effect."

"*The London Medical Recorder*" says of it:—"A pipe which is singularly pleasant smoking, and divests the smoke of its acrid and injurious constituents. Unlike most pipes, constructed on scientific principles, it is by no means unsightly in appearance, and does not exceed the usual dimensions. Refills are provided for both the radiator and accumulator, so that the pipe remains practically unfouled."

PRICES WITH REFILLS COMPLETE:—

PIPES	CIGAR HOLDERS	CIGARETTE HOLDERS
3/6 EACH.	2/6 EACH.	2/- EACH.

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SURG.-MAJOR CROMBIE, M.D.
W. H. ELAM, F.R.C.S.
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Prof DUJARDIN-BEAUMETZ, M.D., Physician Hôpital Côchin, Paris. DYSPEPSIA

W. H. ELAM, F.R.C.S., Surgeon Cancer Hospital, London. CANCER

FREDERIC S. EVE, F.R.C.S., Surgeon to the London Hospital, and Evelina Hospital for Sick Children.
GENERAL SURGERY, WITH RECTAL AND VENEREAL DISEASES

Prof. C. A. EWALD, M.D., Extraordinary Professor of Medicine at the University, and Director of the Augusta Hospital, Berlin. DIGESTION: ITS PATHOLOGY AND THERAPEUTICS

E. HURRY FENWCK, F.R.C.S., Surgeon to the London Hospital, and St. Peter's Hospital for Urinary Diseases.
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RENAL SURGERY

T. COLCOTT FOX, B.A., M.B., F.R.C.P., Physician Diseases of the Skin, Westminster Hospital, and Paddington Green Hospital for Children, London. SKIN DISEASES

JOHN H. GLENN, M.B., B.Ch., M.A.O., Assistant Master Rotunda Hospital, Dublin. OBSTETRICS AND GYNÆCOLOGY

J. DUNDAS GRANT, M.A., M.D., F.R.C.S., Surgeon Central London Throat and Ear Hospital; Throat and Ear Surgeon West End Hospital for Nervous Diseases.
DISEASES OF EAR AND NOSE

Prof. G. M. HAMMOND, A.M., M.D., Professor of Diseases of Mind and Nervous System, New York Post-Graduate School and Hospital. DISEASES OF NERVOUS SYSTEM

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C. N. MACNAMARA, F.R.C.S., Surg. Westminster Hospital; Author of "*Hist. of Asiatic Cholera.*" CHOLERA

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WM. J. SMYLY, M.D., F.R.C.S.I., Master of Rotunda Hospital, Dublin. OBSTETRICS AND GYNÆCOLOGY

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JOHN W. TAYLOR, F.R.C.S., Surgeon Birmingham and Midland Hospital for Women; Consulting Surgeon Wolverhampton Hospital for Women. EXTRA UTERINE GESTATION

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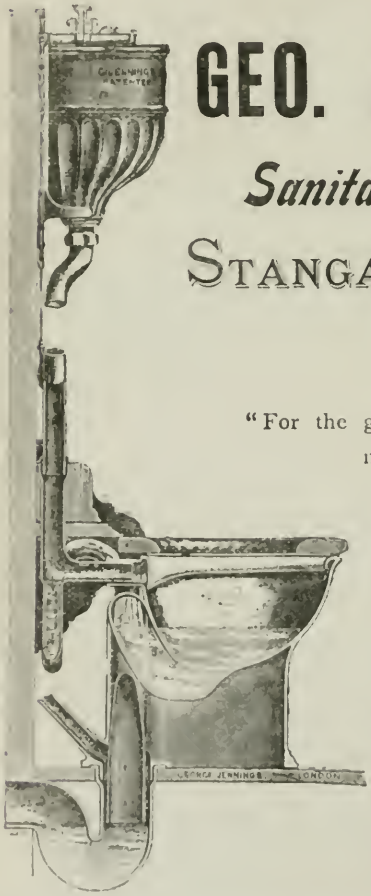

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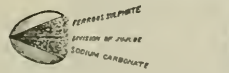

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PREFACE.

THIS volume contains, in addition to a complete report of the progress of Medical Science in all parts of the world, a large number of original articles and reviews from the pens of European and American authors on the subjects with which their names are especially associated. A glance at the list of contributors will furnish evidence of our desire to make this work not only reliable, but thoroughly representative of the views of all schools and countries.

The design we keep before us is to bring the practitioner into direct communication with those who are advancing the science of Medicine in any particular direction, so that practical information, the result of personal experience, may have a larger share in the composition of the work than would be the case if we contented ourselves with a simple collection of abstracts from the various medical journals.

We exercise a constant watchfulness to prevent the expression of only one side of a disputed point, and it will be observed that several articles have been especially written in order that different points of view may be fairly represented. Cholera forms the subject of six different contributions, representing the characters exhibited by the epidemic of 1892 in Asia, Russia and Germany; and also the views held by various esteemed authorities in respect to the methods of prevention and cure.

In the case of the more important investigations communicated to the Medical Press during the year, we are always glad to have, direct from the authors, a short statement of the views advanced, or we are ready to submit to them our abstract of their views for correction. It not infrequently happens that an author has occasion to modify a statement or add a confirmatory fact after the publication of his original article, and we are always ready to afford this opportunity.

We have lost a valued contributor by the death of Dr. James R. Leaming, of New York, which occurred soon after the issue of our tenth edition. He was always unfailing in the discharge of his duties, and his contributions to the pages of the "Annual" were greatly valued, and will be much missed.

It was a great cause of regret to us when Mr. Walter Pye, who formerly edited the Surgical sections of this work, was obliged to resign owing to ill-health, and a sorrow to us that he did not regain his strength and that we have now to deplore his early loss. His name will perhaps be best known to the profession for his "Surgical Handicraft," which has become an almost classical work of reference on Minor Surgery.

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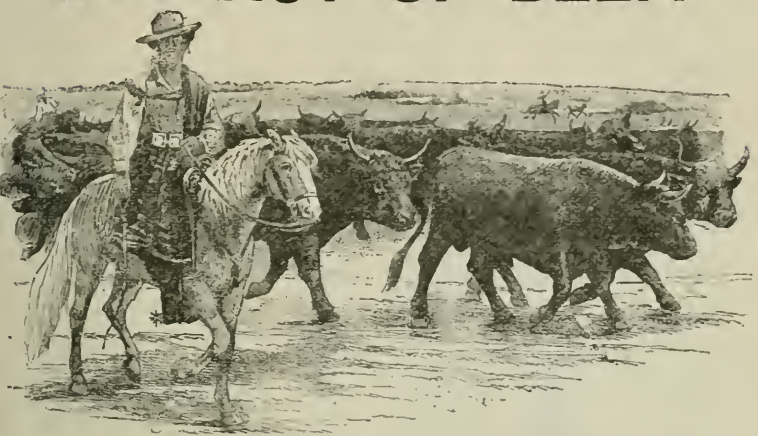

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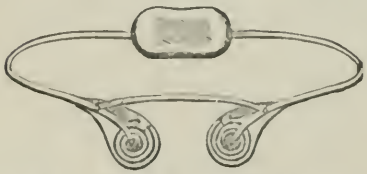

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By Prof. H. A. HARE, M.D.,

Professor of Therapeutics in the Jefferson Medical College, Philadelphia, and Editor of "The Therapeutic Gazette."

It is not the object or aim of this article to consider the relative value of the drugs which have been introduced to the profession during the year 1892. That task has fallen to hands far more competent than those of the writer to deal with it. The purpose is rather to present a summary of how we stand in regard to the advantages which may be derived from the application of remedial measures to the cure of disease, and it is hoped that the effort will at least enforce the recognition of one fact, namely, that the advances recently made in therapeutics are many of them peculiar because of their accuracy and consequent quality and stability. It is true that these gains in our struggle with disease by means of medicines have not been heralded with the pomp and glory attached to the description of new operations by medical and lay periodicals, and as a consequence that the lay mind generally regards medicine and therapeutics as lagging behind surgery. This idea has even permeated the mind of the profession itself to some extent, largely because it is apt to be so dazzled by the brilliancy of an operation in surgery, that the more modest medicinal gain is unobserved. Thus the operations of Keen in America, of Horsley in England, and of Lannelongue in France, upon patients suffering from cerebral disease, staggered us with their daring and possibilities of relief; yet these procedures are fast falling to a level far below that to which they seemed at first to belong, leaving behind them a glow which still remains bright enough to blind those who are only interested in such lines of work. Surgical measures of relief are

always surrounded by more *éclat* than those employed in medicine. Nevertheless it is in the latter that there is required an accuracy of minute diagnosis and of judgment as to the remedy suited to the stage of malady, which is largely unnecessary in surgical procedure. The relation of the knife to living tissues must always be identical, while the relation of a drug to a disease-process must constantly vary with the perverted function of the special protoplasm involved. The one carves the wood, the other grafts upon its living cells, by the guiding power of properly selected remedies, impulses which alter their activities and their manner of existence. In the one case the question of shock and repair are the points to be decided ; in the other the ever changing vital processes still more varied by disease. Surgery too often neglects medicine to the detriment of the patient, and, as a result, we see the most skilful operators allowing their patients to pass through convalescence without aid, or worse still, with misdirected drugging.

Surgery and medicine are in danger of illustrating the fable of the hare and the tortoise.

It is quite true on the other hand, that physicians are too apt to be carried away by the promise surrounding the advent of a new drug, and the ungovernable rush of the profession in an enthusiastic wave to the coal tar products for the reduction of fever, or to the tuberculin of Koch, seems to find no likeness except in the onset of an acute febrile disease, while the absolute distrust which now exists in the minds of the majority of the profession as to the value of these products is represented by the sudden fall of bodily temperature seen in crisis.

Recognizing these tendencies to optimism on the part of both physicians and surgeons, not a few of the profession have asked whether, taking all things into consideration, our therapeutics to-day are really far enough ahead of those of our forefathers to show a gain commensurate with the efforts made by the chemist, apothecary and physician, to cause an advance. Doubtless there are those who, wearied with the long list of useless and feeble remedies, have been too tired to separate the comparatively few which possess marked advantages ; or again, some doubt all new remedies because they have been disappointed in a few they have tried. A calm, judicial view of the question certainly shows that such pessimists are in the wrong. No one who studies the therapeutics of twenty years ago can for a moment doubt the reality of an extraordinary improvement. It is true we are apt with our new remedies oftentimes to neglect older ones of more tried reliability and to banish drugs which deserve frequent usage. First and foremost in the line of advance is the *improved methods of*

administration both as to the form and method. Beginning with the introduction of **Hypodermic Injection** by Wood in the middle of this century and ending with the valuable method of producing local or general medication through the use of **Kataphoresis,** we find that we have passed through a period in which many useful means of administering drugs have been developed. By no means one of the smallest of these is the use of inhalers and inhalants, and the development of local applications to the air passages, by means of steam vapour or the use of atomizers. Further than this, the use of rarefied and compressed air has proved itself to be of great value in pulmonary disorder, while closely associated with this method is the employment of oxygen gas in certain forms of anæmia and pulmonary difficulty.

To point out the value of hypodermic medication is a waste of space, so universally is its absolute importance and general application recognized, and to the practitioner of the day it is hard to conceive how the physician could have managed a large number of cases without it. Of the value of kataphoresis more may be spoken, not because it is not as useful, but because its range of application is perhaps not quite so wide and so well known as is that of the hypodermic needle.

Its results can rarely be expected to manifest themselves as rapidly, but in the treatment of local diseases, as neuralgia of superficial nerves, syphilitic eruptions, or rheumatic conditions, it offers a field for the practitioner which promises much in those most pressing cases where older measures have failed. It enables the physician to administer drugs without disturbing digestion or offending the palate.

Yet kataphoresis is only a subdivision of a large therapeutic resource, namely, **Electricity,** a resource given us only within the last few years. This force is used so successfully and so diversely by all branches of the profession as a means of diagnosis, of cure and for operative purposes (as in the use of the electrical cautery), not to speak of its use in lighting up internal parts, that its value is inestimable.

Very closely allied to the use of electricity for the improvement of nutrition are the modern methods of **Massage** and **Swedish Movements,** measures of very extraordinary value in the large class of cases to which they are applicable.

The development of intense cold and consequent local anæsthesia from the evaporation of **Rhigoline** and by the employment of **Chloride of Ethyl** certainly offers an important instance of advance in therapeutic resource, and the general anæsthetics are such indispensable aids that we are apt to forget that only fifty years ago their use was practically unknown. Within the last decade **Cocaine** has proved a

gain, the value of which cannot be estimated, both for its anæsthetic effect and its general systemic influence.

As short a time back as 1884 we had no reliable drug for the relief of any form of severe pain, save opium or one of its derivatives; yet since that time **Antipyrin, Acetanilide** and **Phenacetin** have relieved an amount of human misery, resulting from painful manifestations of functional or organic nervous disease, which it is not in the power of the human mind to estimate, and this, too, in most cases without any ill effects, such as follow the opiates. Only the vivid picture of a crisis in locomotor ataxia, or the agony of a true migraine, can impress the observer with the full value of these analgesics. Nor have these products proved themselves limited to any one class of cases. They have proved a perfect wonderland of useful application, and there is certainly no drug ever discovered which is so universally applicable as antipyrin, the powers of which are almost as diverse as disease itself. The extraordinary fertility of the **Coal Tar** series seems as yet unexhausted for the production of useful remedies, and the development of synthetical products promises to place us in a position almost independent of the vegetable kingdom for our drug supply.

The **Antiseptics** such as iodoform, iodol, dithymol di-iodide (aristol), europhen, and their near relatives, have added untold advantages to the armamentarium of the surgeon and physician. Without special mention of the ordinary salicylates, remedies of unquestioned value, whose comparative age has caused them to be overshadowed by more recent drugs, we should remember the gain in our resources given us in **Salol,** the action of which is too well known to need mention here, though its value as an anti-rheumatic, anti-fermentative, and remedy for choleraic diarrhœa and other disturbance is but half recognized.

Not only has salol been proved of value in these conditions by clinical experience, but its value has been proved by scientific investigation as well, for the studies of Armand, Brieger, and a host of others, have shown the presence of animal alkaloids, which result from putrefactive changes in the organism, and which are found to be inhibited in their formation by the use of salol or other intestinal antiseptics. Salophen also promises much in similar lines.

It is scarcely more than a decade since **Cascara Sagrada** first entered the materia medica list, and during that time has displaced all the popular laxatives to such an extent as to be more largely used for this purpose than any other drug of its class.

The heart pang of angina pectoris has found its amelioration or cure in the **Nitrites.**

Camphoric Acid is a remedy capable in many cases of preventing

the exhausting sweats of tuberculosis, and the preparations of **Strontium** have within this year been added to our list of valuable new remedies.

Ichthyol offers a wide range of application which in many instances is invaluable, and synthetic products closely resembling it seem to be of more service than would be imagined.

It is useless to remind the reader that chloral and the bromides are only comparatively ancient in their introduction, and have been followed by an array of somnifacients, the chief of which is probably **Sulphonal.**

Of remedial measures, other than drugs, we find the important advance of **Hydrotherapy** along rational lines. Its extraordinary power in typhoid fever, as shown by Brand and his followers, and its value both externally and internally, have been well proved in many widely separated diseases. Thus **Enteroclysis** in the treatment of diarrhœa, dysentery, and the intestinal disorders of children, not to speak of its value in true cholera, is largely resorted to and gives results attainable in no other way. The substitution of transfusion by **Hypodermoclysis** is a very positive gain in a large class of cases, and has again and again proved its usefulness in practical experience.

It is impossible to enumerate the large list of important drugs so far unconsidered ; sufficient evidence of the advances in therapeutics from the additions of new remedies has certainly been adduced.

Let us for the moment turn from the drugs themselves to the form in which they are used.

In place of the decoctions, infusions, and syrups of thirty years ago, we find alkaloids representing quarts of crude medicines, and so prepared as to be in many instances tasteless and agreeable. The tablet triturate, the tablet, the finely coated pill and the capsule have rendered the administration of remedies an agreeable task, while the increased accuracy in dosage, in results, and in cheapness, cannot be estimated.

In other directions the advances of therapeutics have been most happy. The study of the action of drugs on a rational basis has been pursued with extraordinary zeal and activity, and has been rewarded by results which seem almost incredible. Whatever lack of rational action attends medical treatment to-day is the fault of the pathologist, not of the therapeutist. As has been well said, when the pathologist or physiological chemist will tell us the cause and pathology of rheumatism, the therapeutist will not only have preceded them by years in the use of the salicylates and iodides, but will be able to explain how these remedies do good.

The discovery of the malarial germ at once enabled us to explain

the value of **Quinine** in malarial disease, and the researches of Haig and others seem about to render positive our belief that the **Salicylates** do good in rheumatism by reason of their affinity for uric acid.

To one who carefully studies the subject of therapeutics, it becomes evident that it is the lack of rational action which most frequently causes the physician or surgeon to condemn drugs. Too often the mere fact that a remedy has been given by another physician in a certain ailment seems all that is needed to induce a practitioner to employ it without any idea of the precise condition or stage of the disease in which it is supposed so be of service, and in consequence seemingly contradictory results are reached. Thus in America many physicians get very good results from the use of full doses of **Veratrum Viride** in the earliest stages of pneumonia, immediately after exposure, and from the use of **Digitalis** later in the disease. On the other hand, in large cities and in England many cases are seen in which the circulatory state from the very first requires stimulants, or at least forbids sedatives. The employment of veratrum viride in the one case is correct, in the other it is wrong. The diagnosis that the man has or has not pneumonia is made with readiness, but the more important questions as to his exact physical condition, and the remedies most applicable to its treatment, require a degree of fine judgment often not exercised and always most essential.

Those who are inclined to regard the therapeutics of to-day with incredulity rarely consider all the points at issue. No one should allow isolated instances of success or failure in treatment to influence him in forming a definite conclusion as to the value of a remedy, for when the peculiarity of the mind of each individual physician is placed in juxtaposition with personal idiosyncrasy on the part of the patient, we cannot wonder that the results of treatment are often unsatisfactory, particularly when the diagnosis may be faulty and the remedy abused.

The difficulty is not that the advance of therapeutics has been too slow, but that it has been too fast, —so fast that the careless physician, who graduated in the old days of empiricism, fails to understand the newer methods of practice, and does not appreciate that at the present time our knowledge of all the branches of medicine is sufficiently far advanced to make very definite symptoms require very definite remedies, and to require that the prescriber is possessed of very clear ideas as to why he uses one remedy and discards another.

To the pathologist or bacteriologist, and to the physiologist and chemist, the therapeutist is much indebted ; but if the researches of these observers have led them into therapeutic nihilism, it is

because they have advanced such a little distance themselves that they cannot see in the future a sufficiently definite result to permit the therapeutist any rational basis for research or treatment.

We are daily having more remedies offered us for trial than we can possibly study or even employ, and are most actively engaged in the distribution of each new medicament to the pigeon-hole in the materia medica list where it belongs. The theoretical fault with the therapeutics of to-day does not lie in an inability on our part to understand the action of a remedy as much as to our inability to limit its action to the purpose for which we employ it.

It is only in one line that these workers have directly advanced our therapeutic resources, and this advance is at present rather in the nature of a promise than of a practical gain. The whole subject of the treatment of disease by **Antitoxines** is so recent and so imperfect in its details, so far as the human being is concerned, that the method has only been tried in a limited number of cases, too few to prove of positive value to the general practitioner. Perhaps the most encouraging results so far reached in this line of therapy are those obtained by the Klemperers, who were able to produce crisis in six cases of pneumonia in from six to twelve hours after the injection of serum derived from patients who had suffered from pneumonia. They used from four to six cubic centimèters hypodermically. Still more recently Hughes and Carter, of Philadelphia, have carried out a similar course of treatment, in one case with very good results. Cases have also been reported with good results by Neisser, Redner and Janson. In Hughes' and Carter's case three hundred cubic centimèters of blood serum, taken from a convalescent case of pneumonia, were injected into the left median basilic vein by the use of a cannula, tube, and funnel, the force of gravity being the agent used in the injection. Similar work has been done in the treatment of cholera by Haffkine, Klemperer and Ferran, and by Tizzoni, Cattani, and others in relation to tetanus.

These researches being still *sub judice*, let us hope that this last decade of the nineteenth century may not only decide as to their value, but be more than ever blessed by further additions to our list of valuable remedial measures.

It is to be hoped that in the future an anæsthetic may be discovered which will anæsthetize without depressing the vital functions, and without destroying consciousness, and that our knowledge of the action of medicine will be so advanced that drugs may be discovered and wisely employed which have a selective affinity so well developed as to act on the one part of the organism which needs their action,

without affecting other parts. Singleness of action in a drug is as valuable as singleness of purpose in a man, and confidence in the results to be obtained depends upon the development of this characteristic.

It is this singleness of purpose which has led to the very advances which this article considers. The profession has become tired of empiricism; it is anxious to know the pathology of disease, because its therapeutics can then become rational. Its gains have shown that further advance is possible, and its enthusiasm and optimism carry forward the study of disease successfully. Even though there may be instances of lack of judgment on the part of individuals, the general result in therapeutics is such that our successors may well consider this century as the golden age of therapy.

ANEMONIN. [*Editorial.*

Dr. Dupuy describes in "Les Nouveau Remèdes" (July, 1891), a crystalline substance which he has extracted from the wood anemone, and to which he has given the name of anemonine. We presume this is the same substance as anemonin or pulsatilla camphor, which can be readily prepared by agitating the distilled water of pulsatilla with chloroform (1 in 10), and allowing it to separate into two layers, the lower of which is the chloroformic solution. This is distilled, and the residue, after being treated with strong alcohol, is allowed to crystallize. The result appears in volatile prismatic crystals, which are more soluble in alcohol than water.

The statement given of its action by Dr. Dupuy corresponds closely with our previous knowledge, and the description given in the "Union Médicale" (1886). It has the power of stimulating and finally paralyzing the respiratory centre, and, acting through the spinal nerve centres, it diminishes cardiac activity and voluntary movements. It is recommended for disorders where the respiratory centre is excited, for **Convulsive Cough, Asthma** and **Whooping Cough.** The dose is from $\frac{3}{4}$ to $1\frac{1}{2}$ grains.

There appears to be no advantage in the use of the active principle over the tincture of the plant, and modern investigations of its therapeutical properties carry us little further in our knowledge than the records of the older writers.

Its properties are well described by a writer in the "Medical Journal" (vol. xvii. p. 73) so long ago as 1807. He mentions that Baron Stoerck was the authority by whose advice it was made officinal in the "Edinburgh Materia Medica," that he had found the greatest

benefit from its use in many **Chronic Diseases of the Eye,** and that he also used it for **Caries, Indurated Glands** and **Suppressed Menses. Palsy** was also one of the disorders in which he found it useful.

Dr. Cullen suggested that it should be tried for **Amaurosis.** In 1876 Dr. John Brunton contributed a paper to the Medical Society of London (vol. iii. p. 67), describing the success he had met with by the use of this remedy in **Catarrhal Affections of the Nose, Eyes, Vagina** and **Bladder,** and also in **Bronchial Catarrh.** He also mentioned its value in **Amenorrhœa** and **Catarrhal Dyspepsia.**

That it has the power of producing sanguinolent diarrhœa is mentioned by Dr. Dupuy in the article we have quoted, and we notice that it is also incidentally mentioned in an article on Medical Topography ("Med. Jour.," 1809,) that the anemone has produced diarrhœa and dysentery in sheep, and sometimes bloody urine. We may gather therefore that it has a specific irritant effect upon the mucous membranes, and that, like other irritants, it may be used as a stimulant to the mucous membrane if given in moderate doses. This fact, taken with our knowledge of its action on the medulla, and as a primary stimulant of the spinal cord, gives a basis for its intelligent use in therapeutics.

As regards the eyes, we should expect that the mucous membrane would be most susceptible to its influence, and that catarrhal conjunctivitis might be benefited by its use both internally and by external application.

In affections of the respiratory organs, we have direct evidence of its power to cause spasm of the respiratory centre; but it shares this power with other drugs, and it is probable that its action would be most direct in those cases where the spasm was associated with catarrh of the respiratory and gastric mucous membranes, rather than where the disorder was a pure neurosis. We find such conditions in the bronchial catarrh of children, and notably in association with measles. As a stimulant to the gastric mucous membrane, we should expect it to prove useful in that condition where the tongue shows a catarrhal and irritated condition of the stomach, not as a secondary result of hepatic disorder, but as the direct result of the use of rich or unsuitable food, and probably also when this condition is the result of a chill. It should also be useful in that atonic condition of the mucous membranes which is common amongst anæmic persons.

Its use in **Leucorrhœa** might be adopted on similar principles, both internally and externally.

In respect to its use in **Amenorrhœa,** for which it has a certain

reputation among modern authorities as it had with the older writers, we know that it shares with other remedies the faculty of frequently failing, and, so far as we are aware, there is no evidence to show that it possesses any specific action on the uterine organs. It is quite possible that a remedy which possesses a stimulant effect upon mucous membranes may, by relieving the temporary congestion or catarrh which follows a chill, restore the menstrual discharge when it has been checked by this cause, and it may be invaluable in such cases, although it may prove useless in primary amenorrhœa. The same reasoning may be applied to its supposed virtues as a remedy for **Dysmenorrhœa.** It is the exceptional case in which it might be expected to succeed. The cause which may suppress the flow in one case may render its incidence painful in another, and it is here that we may find the remedy warrant the praise which some have given it. These views may form a working hypothesis until our knowledge of the action of the remedy is further extended. When employed for its stimulant properties, the dose must be regulated to avoid its effects as an irritant; 5 drops of the tincture is an average dose which it is sometimes found necessary to reduce when the mucous membrane is irritable.

ANTINERVINE.

This is simply a combination of salicylic acid (1 part), acetanilide (2 parts), and bromide of ammonium (1 part). It has been used with fair success in the treatment of **Neuralgia.**[1]

REFERENCE.—[1] "Vratch," 1891, No. 39, p. 883.

ANTISEPTINE.

This has also been shown to be simply a mixture, and not a chemical combination as represented. It consists of iodide of zinc 2½ parts, thymol 2½ parts, boracic acid 10 parts, and sulphate of zinc 85 parts.

ANTITOXIN (Tetanus).

Injections of the blood serum of rabbits which have previously been made "tetanus immune" have lately been used for the cure of **Tetanus.** A case was recorded in our last issue (p. 483).

Finotti[1] reports another case in which the antitoxin of Tizzoni and Cattani was employed. This is obtained by the addition of alcohol to the serum, the precipitate being dried in vacuo.[2] It was used in the case of a boy in whom tetanus came on ten days after a surgical operation. The antitoxin was prepared from the blood serum of a dog which had been rendered artificially immune. The injections were employed in various parts of the body in doses of 0·15 to 0·20 of

a gramme, which were dissolved in 3 c.c. of sterilized water. The patient gradually recovered.

G. Taruffi[3] has used this treatment in six cases. He employed doses of 25 centigrammes. In one case the patient's urine was collected and injected into rats and guinea pigs; these animals died of tetanus. On the second day of treatment some of the patient's blood was drawn and injected into rats; it was then found to be innocuous. The patient recovered on the eleventh day of treatment. The symptoms commenced as a result of a finger wound, and the fact that the finger was amputated three days after the commencement of the tetanic symptoms, may have influenced the result. The effect produced by the injection was to cause profuse sweating and the passage of large quantities of urine. Cases have also been recorded by Gaghardi and Schwarz.

REFERENCES.—[1] "Wien. klin. Woch.," No. 1, 1892; [2] "Cent. f. Bakt. u. paras.," Bd. x., No. 24; [3] "Rif. Med.," April 21, 1892.

BENZOSOL (Benzoyl-Guaiacol).

This is a compound of benzoic acid and guaiacol introduced by Dr. Bongartz, of Aachen, as a substitute for creasote in the treatment of **Phthisis Pulmonalis.** It has the advantage of being colourless, odourless, and practically tasteless. It is a crystalline powder with a melting point of 50° C., insoluble in water, very little in glacial acetic acid, soluble in chloroform, ether, and hot alcohol. In the gastro-intestinal tract it soon breaks up with its components guaiacol and benzoic acid. This process begins in the stomach, but takes place mainly in the small intestine.

It is found advisable to commence with doses of 4 grains, and gradually increase the quantity as the patient becomes accustomed to it. It has been given in doses of 15 grains, three times a day, without the production of any unpleasant effects. It is conveniently made into a lozenge with sugar and chocolate.

BENZOYL-NAPHTHOL.

MM. Yvon and Berlioz describe in papers contributed to the "Practitioner" (Dec. 1891), and "Le Progrès Médical" (Nov. 1891), another compound of β-naphthol, to which they have given the above name. They intend it to take the place of betol, which is known as a combination of salicylic acid and naphthol, being more antiseptic and less toxic. It is prepared by heating together in a glass flask of about two litres capacity, upon a sand bath, 250 grammes of β-naphthol, and about 270 grammes of very pure benzoyl chloride. The heat is applied so as to raise the temperature gradually to 170° C., at which point the

reaction goes on regularly, and is continued at that point for thirty minutes. This part of the operation should be conducted under a hood to avoid injury from the irritating vapour given off. Upon cooling, the liquid forms a solid mass, consisting of benzoyl-naphthol and a little naphthol. The crude product is purified by two or three crystallizations from boiling alcohol. It is practically insoluble in water, sparingly so in hot alcohol, while chloroform dissolves 1 part in 4.

Benzonaphthol when introduced into the alimentary canal breaks up into β-naphthol, which remains in the intestine, and benzoic acid, which is eliminated in the urine in combination with alkaline bases; a greater or less portion is also transformed into alkaline hippurates.

The first trial of the drug was made by Dr. Gilbert in one of the hospitals of Paris. He observed that, in addition to its action as an **Intestinal Antiseptic**, it possessed a marked **Diuretic** power, and that the toxicity of the urine so passed was notably reduced.

The authors express the following as the conclusions they have formed as a result of their experiments with the drug: (1,) It is very slightly toxic; (2,) Its antiseptic power is comparable with that of the other substances employed in promoting intestinal antisepsis; (3,) It promotes diuresis, and diminishes the toxicity of the urine; (4,) The portion of it which is absorbed is easily and rapidly eliminated by the kidneys; (5,) The dosage may be rapidly raised for adults to 75 grains a day, and for children to 30 grains a day. It should be given in small quantities frequently repeated. A dose of about 4 to 8 grains in wafer-paper, or suspended in a convenient vehicle (syrup and water, for example) suffices in the majority of cases.

BORO-BORAX.

This is a compound, discovered by Jaenicke, formed by mixing equal parts of borax and boric acid in boiling water. It is a crystalline, neutral body, of great solubility in comparison with boric acid, 16 per cent. dissolving in cold water, about 30 per cent. in water of the temperature of the blood, and 70 per cent. in boiling water.

REFERENCE.—"Lyon Médical," Jan. 3, 1892.

BROMAMIDE.

This is a bromine compound of the anilide group, containing 75 per cent. of bromine. It is nearly odourless and tasteless, and has been tried by Dr. Caille in **Typhoid Fever, Rheumatism, Nephritis,** and **Neuralgia.** He finds that it has the power of reducing the temperature in most cases of febrile disease, without the excessive sweating produced by other antipyretics. It has no pronounced diuretic effects,

and does not produce any unpleasant results as regards the digestive system. It proved decidedly useful in several different forms of neuralgia. It can safely be given in doses of from 10 to 15 grains several times a day.

REFERENCES.—"New York Med. Journ.," Feb. 20, 1892; "Practitioner," May, 1892.

BROMIDE OF ETHYL.

Dr. J. H. Brinton,[1] after a trial of this anæsthetic in forty-five surgical operations, does not advocate its extensive use because of its tendency to produce muscular rigidity, either general or local. Sometimes there was complete opisthotonos, and in one case firm contraction of the abdominal muscles. He also found that the tendency to violent hæmorrhage after the operation was increased, owing to the rise of blood pressure it caused.

This tendency to tetanic spasm appears to us to be due to the too slow administration of the anæsthetic, and this view is supported by the following experiments which Drs. Quin Thornton and Edwin Meixell[2] performed in the laboratory of the Jefferson Medical College. They find that the dominant action of bromide of ethyl is on the respiratory and not the circulatory system, and that large doses are necessary to produce this depression, and death only occurs as a result of respiratory failure. The pulse is slowed, due, they believe, to stimulation of the pneumogastric nerve. When doses were administered sufficient to cause respiratory failure, the respirations would frequently recommence, especially after a few movements to excite artificial respiration. This is due to the very transient action of the drug.

They give a very practical hint as to the mode of administration. It should not be given in a diluted form during several minutes, but pushed actively during the few moments necessary to produce anæsthesia. They also point out that it is better to keep it in small one ounce phials (dark coloured), so that when once opened it may be promptly used. When protected from light and air it is of a light straw colour, but after exposure it becomes colourless. The authors only recommend it for brief operations.

REFERENCES.—[1] "Therap. Gaz.," April, 1892; [2] "Therap. Gaz.," Sept., 1892.

BROMIDES.

Prof. Féré, of Paris, stated some time ago that the unpleasant results which followed the use of large doses of the bromides were due to the intestinal tract being in a condition of sepsis that prevented the proper assimilation of the drug. He recommended the administration of such

intestinal antiseptics as naphthol and salicylate of bismuth as a means of removing drug intolerance from this and from other causes. The following formula is one method found by him to be advantageous, in the treatment of **Epileptics** especially :—

℞ Potassium Bromide ʒjss | Salicylate of Sodium ʒss
Beta-naphthol ʒj | M.
Sig.—Divide into three doses, 1 to be given three times daily.

He considers that this treatment is curative as well as preventive, and has found that the eczema and psoriasis which sometimes follow in the train of borax will also disappear if the intestinal tract is rendered aseptic. To the formula above given some Paris physicians are in the habit of adding $\frac{1}{30}$ of a grain of sulphate of strychnine.

We think that these views must be accepted with a certain reserve. Bromism is undoubtedly a manifestation of the specific effects of the drug, and if such symptoms did not appear after the admixture of the above substances, it might be accounted for by the fact that the mixture had not the same physiological effects as the pure drug.

REFERENCE.—"New York Med. Journ.," Sept. 5, 1891.

CANTHARIDES.

The "Therapeutic Gazette" (March 15, 1892) gives the following able summary of the therapeutic uses of this drug :—

"To many practitioners the internal employment of cantharides is almost a novelty, yet it has been used by physicians in some portions of the world for many years for the purpose of affecting areas widely separated from one another, or, at least, suffering from various diseases. As with many other substances, which, in large amount, act as irritants, cantharides acts in small amounts as a stimulant to epithelial cells, in many instances improving the condition of the skin in diseases affecting its nutrition and increasing renal activity in maladies situated in the kidneys. Quite frequently we see cases in which, after an attack of **Acute Nephritis,** the urine remains scanty and the renal action is defective. Sometimes in **Fatty Kidney,** such as is met with in persons who drink excessively of beer, a similar state of renal incompetency is present, and it is by no means rare to have cases present themselves who may or may not be sufferers from **Cardiac Asthma,** and who have engorged and congested kidneys from circulatory and pulmonary disturbance. These forms may all of them be associated with **Albuminuria** in a more or less severe form, and casts may be present in considerable numbers. A very much more common series of cases includes those who seem to be out of sorts because of **Renal Atony** consequent upon organic renal disease. In all of these conditions it will be found that tincture of cantharides, in small doses of

½ to 1 drop three times a day, with or without digitalis, will do much towards stimulating the depressed and inactive secretory epithelium of the kidney to increased exertion. If the drug act favourably, it will cause a very distinct increase in both the liquid and normal solid constituents of the urine, decreasing simultaneously the amount of albumin.

"Sometimes a case will present itself suffering from **Chronic Contracted Kidney,** in which there will be considerable œdema of the calves of the legs and thighs, and for this reason, and because of deficient nutrition, the skin of these parts takes on a purple appearance, while at various spots early signs of leg ulcer manifest themselves, or an eczema rubrum is developed. In such a case the administration of tincture of cantharides, in the amounts named, results in a decrease in the œdema and in great modification of the skin lesions. Dermatologists have long known that internal doses of cantharides prove useful when chronic scaly inflammations of the skin are present, and it is, therefore, evident that the action of cantharides in such a case as that named is not only indirect through its renal influence, but direct through its effect on the skin itself.

"*Full doses of tincture of cantharides are not to be resorted to if small doses—that is to say, 2 drops three times a day, at the utmost—do not prove efficient.* There is the danger of inflaming the secreting cells in an injured kidney, and so disabling the entire organ temporarily or permanently.

"Another very useful employment of cantharides internally is, in some forms of **Urinary Incontinence,** dependent upon lack of vesical control. As was pointed out by Ringer, women will be met with who, after childbirth or prolonged illness, not associated with urinary disease, will be troubled by the escape of a few drops of urine on making a sudden movement, on coughing, or when beginning to laugh. Sometimes in **Chronic Bronchitis of the Aged** this lack of vesical control is a cause of great misery. No remedy seems so competent to cause permanent relief in these states as tincture of cantharides in ½- to 2-drop doses three times a day. Eliminated by the kidneys, the cantharides stimulates the sensory nerves in the mucous membrane of the bladder, just enough to restore reflex activity to its proper level, and thereby preserves the retentive power of the sphincters.

"Should a decrease in urinary secretion occur when cantharides is being employed, it must be immediately withdrawn, as this sign indicates that renal stimulation has passed on to renal irritation."

Dr. Pedro Albarran, of Sagua la Grande, Cuba, records in the

"Revista de Ciencias Medicas," a case where severe cystitis was caused by blistering with cantharides.

CATRAMINE.

This is described by Dr. Vincenzo Gauthier[1] as an essential oil, which resinifies very easily, and resembles very closely the turpentines derived directly from the coniferæ. Physiologically its action in animals closely resembles that of oil of turpentine. It contains more resin than turpentine, and appears to be better borne. It is absorbed well either by the stomach, or when given as vapour, by the lungs; it is eliminated with the urine in the form of resin. From this fact it should be useful in diseases of the genito-urinary system. From a number of clinical trials the author considers that catramine is indicated: (1,) In **Chronic Respiratory Troubles**, with abundant secretion; in the subacute stages it may be usefully combined with a narcotic; it diminishes the secretions which, under its use, regain a healthy character; (2,) In **Genito-urinary Troubles**, where it may very advantageously replace essence of turpentine.

REFERENCE.—[1] "Gazz. degli Ospitali," Feb. 4, 1892.

CHLORALAMIDE.

Dr. Warren B. Chapin[1] reports that the cases in which he has used chloralamide have been mostly those of **Insomnia** of a very persistent character, in some of which all the other hypnotics had failed. Although his experience with the drug has been mostly confined to one class of cases—those of insomnia depending upon some nervous affection—he has seen enough of its action to convince him that not only does it fail to possess all the virtues attributed to it, but, owing to its uncertain action and the many unpleasant symptoms it produces, it is inferior to most of the new hypnotics.

The conclusion reached by Drs. H. C. Wood and D. Cerna[2] are as follows: On dogs chloralamide has (1,) a slight local influence, and in large doses tends to produce diarrhœa; (2,) It induces sleep by action on the cerebral cortex, having but slight influence on other parts of the nervous system of voluntary life. It is, however, a feeble spinal depressant; (3,) It has a powerful influence on the respiration, in moderate doses increasing its rate, and also the amount of air breathed; in toxic doses, however, death is produced by paralysis of respiration; (4,) It has but slight influence on the circulation save in toxic doses, which reduce arterial pressure by direct action either on the heart or walls of the vessels. Having but little action on the heart, chloralamide should be valuable as a sleep producer when that organ is feeble. Its respiratory stimulant effect should fit it for

employment in **Nervous Exhaustion.** From Wood's own experience the drug seems to be slower and somewhat less sure in its action than chloral; it rarely produces unpleasant after-effects, but slight headache may follow its use. According to Hagen and Hüfler, chloralamide is especially valuable in **Cardiac Asthma**, and this seems to agree with Wood and Cerna's experimental conclusions.

REFERENCES.—[1] "New York Med. Jour."; [2] "Therap. Gazette," Nov., 1891.

COPPER.

Dr. H. A. Hare[1] has done well to call attention to the value of the salts of copper in the treatment of **Anæmia, Chorea**, and other ailments of the nervous system. He recommends the arsenite of copper in doses of $\frac{1}{30}$ to $\frac{1}{15}$ of a grain after meals.

In many of its actions copper is more closely allied to arsenic than any other drug. It produces an acute gastro-enteritis when given in large doses, its characteristic symptom being the great tenderness over the abdomen and the severe nature of the abdominal cramps which cause the sufferer to bend the body to relieve the pain. It is attended with a great deal of fever. When the poisoning is of a more chronic form, such as occurs among copper workers, there is marked anæmia, and general wasting, accompanied by fever. Severe cramps of the limbs and paralysis are frequently observed. Copper has also the power of producing acute inflammation of the kidney in rabbits, but we do not know if this effect has been observed upon the human body. Dr. Hare finds that during the administration of the arsenite of copper in anæmia, that the digestion markedly improves, and it will be remembered that Dr. Roberts Bartholow recommends the sulphate of copper, in doses of $\frac{1}{12}$ to $\frac{1}{32}$ of a grain, for many acute and chronic affections of the stomach and intestines. We think that in small doses the salts of copper have a very wide range of action, and especially in asthenic conditions of the nervous system. For the tendency to cramp in the calf of the leg, which is frequently found in gouty patients, we have never known it to fail.

REFERENCE.—[1] "Therap. Gaz.," Jan., 1892.

CORONILLA SCORPIOIDES.

This is a leguminous plant indigenous to France. An active principle was isolated from the seeds by Schlagdenhauffer and Reeb in 1888, to which the name Coronilline was given.

Dr. Poulet[1] states that he has employed the tincture of Coronilla with most excellent results in the treatment of **Paroxysmal Tachycardia,** being able to overcome pain and the other grave symptoms which

accompany this condition, particularly in those cases which depend upon disease in the aortic or mitral valves. The favourable influence it exercises in **Cardiac Asthma** is very extraordinary. The appetite improves, and the drug seems to exercise a stimulating and tonic effect upon the digestive tract. In a case of **Acute Hyperæmia of the Lung, with Tachycardia, Agonising Dyspnœa,** and danger of fatal **Asphyxia,** he employed coronilla, with the result of obtaining rapid resolution and the avoidance of all complications. The dose under these circumstances was 2½ drachms of the tincture in eight hours, the patient being a man of sixty-four years.

In the cases recorded by Dr. Poulet[2], gastric symptoms with vertigo were present, in addition to the disturbance of the heart. It seems probable that this drug will prove useful in functional derangements of the heart associated with dyspeptic troubles.

Dr. Spillman's trial of the alkaloid[3] showed that it acts fully on the number and rhythm of the cardiac pulsations, but produces an increase in the amplitude of the pulse, and acts as a diuretic while the respirations were improved. Its effect was transient.

The average dose of the tincture is 45 minims a day, given preferably in divided doses. Coronilline is said to be toxic in doses of ⅓ grain, but 3 to 5 grains have been used. Caution is necessary in the use of this drug, as failure of the heart's action is caused by large doses.

REFERENCES.—[1] "Bulletin Général de Thérapeutique," Dec. 15, 1891; [2] "Therap. Gazette," March 15, 1892; [3] "Medical Annual," 1891, p. 24.

DERMATOL (Bismuth Sub-gallate).

Under this name several articles have appeared on the action of sub-gallate of bismuth, which we mentioned in our last issue. Experiments have been made by Colosanti[1] on the microbicide power of this substance as compared with iodoform and aristol. The action was tested on wet cultures and others dried on sterilised paper. The micro-organisms experimented on were staphylococcus pyogenes, staphylococcus pyogenes albus, bacillus pyocyaneus, and the typhoid bacillus. Cultures of these micro-organisms in broth, mixed with iodoform and aristol, were still alive, and grew luxuriantly after eight or nine days. Similar cultures mixed with bismuth gallate seemed to have almost lost their power of multiplication on the fourth or fifth day. On the dried cultures neither bismuth gallate, iodoform, or aristol had any effect after having been kept three days in contact with them. The effect when given internally in a large number of cases of **Diarrhœa,** in **Phthisis, Typhoid, Ulcerative Colitis,** etc., administered

either in wafers, suspended in gummy emulsions, or occasionally combined with powdered opium, was satisfactory, and no toxic symptoms were ever observed. The urine was normal, but the fæces were in nearly every case intensely black in colour, owing to the formation of sulphate of bismuth. The daily dose was 2 to 6 grammes.

Doernberger[2] has found it very useful in the **Moist** and **Impetiginous forms of Eczema. Abscesses** first incised and then treated with the powder granulated up rapidly. In the case of **Wounds,** as Rosenthal has shown by cultivation experiments, it must be used in large quantities. Dermatol ointment is especially to be recommended in **Burns.** In cases of Ottorrhœa Doernberger has not come to any conclusion about its action, and in phlyctenular conjunctivitis it is useless. Its non-toxic qualities are of great importance in the case of children. A 10 per cent. ointment or gauze is employed.

REFERENCES.—[1] "Rif. Med.," Nov. 30, 1891 ; [2] "Therap. Monatshefte," February, 1892.

DIAPHTHERIN.

Kronacher[1] relates his experience of diaphtherin (oxychinaseptol), while Emerich[2] shows that this drug, even in weak solutions, possesses powerful bactericidal properties, while its toxic properties are slight. Kronacher has used it in surgical practice for more than a year, and mostly in 1 per cent. solution. In cases of **Ulcers,** etc., and as an antiseptic in **Operations,** it has given the desired results. No ill effects have been noticed when it has been applied to large surfaces, as in extensive operations. In a few cases it has given rise to a slight feeling of burning, but this has quickly passed away, and eczema has never been produced by it. Instruments should be placed in some other antiseptic solution, as a black deposit is formed on them if the nickel in them is not pure. Diaphtherin has been especially useful in cases of **Burns** and ulcers of the leg.

REFERENCES.—[1] "Münch. med. Woch.," May 10, 1892 ; [2] Ibid. ; "Brit. Med. Jour.," June 4, 1892.

DIGITALIS.

The various preparations of digitalis have formed the subject of an investigation by Dr. Fouquet, of the Côchin Hospital, Paris. He has arrived at the following conclusions as a result of experiments on animals : (1) There exists in digitalis an active principle, fixed and definite, which is digitaline, and which possesses all the properties of the plant itself; (2,) Besides digitaline, there are other compounds sold in commerce under the name of digitaline, which are not identical. These digitalines may be divided into two groups : those

which are soluble in chloroform and insoluble in water, and which are as follows: (1,) Crystalline digitaline, amorphous digitaline, and digitoxin; (2,) The digitalines which are insoluble in chloroform and soluble in water, namely, the German digitaline and digitaleine. The products of the first group, when in a state of purity, possess the same activity and may be employed by the physician with confidence. The drug should be administered in large doses,—$\frac{1}{60}$ of a grain at a time if diuresis is insufficient; $\frac{1}{100}$ of a grain may be given on each following day. Care should be exercised that a cumulative effect is not obtained.

Dr. Robin, of Paris, in a recent lecture, gave the following as his conclusions respecting the action of digitalis: (1,) When digitalis is given in powder, it develops an irritation of mucous membranes. For this reason it should be administered in small doses and not in pill form, because under these circumstances it may produce irritation of the stomach; (2,) Digitalis undoubtedly possesses a cumulative influence, and as its active principles are eliminated very slowly from the body, for this reason it is not safe to continue it for long periods of time; (3,) Digitalis in small doses decreases the pulse-rate, but in large doses accelerates the pulse. This is the secret of the difference of opinion of physiologists. The results obtained by the smaller dose are those which are desired in medicine, and acceleration of the heart shows that dangerous quantities of the drug are being used. It is important to remember that the action of the drug persists for a long time after its administration; (4,) Small doses increase arterial tension, large ones diminish it. The respiratory movements are accelerated by small doses, but decreased by large ones; (5,) Small doses of the drug diminish the excretion of nitrogenous materials, or, in other words, tissue waste is decreased, the urea being decreased from twenty-six to seventeen grammes; (6,) Digitalis augments diuresis. When in large doses, it produces an increase in the amount of urine secreted.

The important point to recognize is that large doses here spoken of are practically poisonous; the small doses are the ones which are generally employed in medicine.

If the patient should suffer from tachycardia, with an extraordinary diminution of arterial tension, it is considered wise by Robin to associate ergotin with the digitalis, which has a direct action upon the muscles in the walls of the arteries and veins. For this reason he considers it wise to employ the following prescription:—

℞ Powdered Digitalis gr. x | Water ℥vj. M.

Sig.—Macerate and add Bonjean's ergotine, 30 grs.; iodide of potassium, 1½ drachms; syrup, 7 drachms. To be taken in the course of six days.

At the same time the patient is to take nothing but a pure milk diet, and the milk should be skimmed.

In a case in which there was asystole, with orthopnœa, and œdema, and in which there were no traces of albumin in the urine, small doses of caffeine were administered, and the following prescription given :—

℞ Milk-sugar	ʒjss	Iodide of Potassium	gr. xv
Acetate of Potassium	gr. xv	Water	Oij M.

Sig.—This is to be taken each day.

References.—"L'Union Médicale," No. 10, 1892 ; "Therapeutic Gazette," April 15, 1892.

DIURETIN.

This is the sodio-salicylate of theobromine, and has been described in former issues.

Ruggieri[1] has tried diuretin in eighteen cases—five of pleurisy with effusion, one of pleurisy and peritonitis, five of cirrhosis of the liver, six of nephritis, and one of heart disease. He thinks the diuretic action of the remedy incontestable, but the increase of renal excretion is most marked in heart cases. It is less so in nephritis, especially in chronic cases. The drug has no effect in cirrhosis of the liver. Ruggieri does not agree with Gram that diuretin is well borne in all cases ; in most of the patients on whom he tried it, its administration was followed by headache, giddiness, nausea, vomiting, and diarrhœa.

Dr. S. Pfeffer[2] found it act promptly in **Cardiac Dropsy, Chronic Nephritis,** and **Cirrhosis of the Liver,** but had no effect in acute nephritis or pleurisy. He gave a daily dose of from 75 to 150 grains.

Dr. Schnieden[3] found it produced no effect in pure cirrhosis of the liver or in tubercular peritonitis. It was uncertain in chronic nephritis, but useful in the majority of heart cases, where it not only increases the quantity of the urine, but also that of the urea excreted.

Dr. Kress[4] concludes that diuretin is a powerful and true diuretic, increasing both the watery and the solid constituents of the urine. Its effect is due to a direct, non-irritant action upon the parenchyma of the kidney. It exhibits its diuretic action best in acute and chronic diseases of the heart and kidneys, but especially in acute nephritis and pure valve lesions. Chronic nephritis and weakness of the heart-muscle were favourably influenced, while in pure serous effusions and in tuberculosis in the stage of dropsy, no good result is to be hoped for from diuretin.

Dr. H. A. Hare[5] found less favourable results than he was led to expect from the reports of former authors. In order to determine

whether any particular value lay in diuretin (Knoll) or in the sodio-salicylate of theobromine made by Merck, both preparations were employed by him alternately without any difference in result. His concluding remarks are worthy of note: "Perhaps no better example of the price which can be put upon a name can be found than in the example before us. Diuretin (Knoll) costs two dollars and fifty cents an ounce, but sodio-salicylate of theobromine (Merck) costs fifty cents an ounce, or one-fifth as much. At the dose of two drachms a day the drug at the first price becomes an impossibility to many persons, —an advantage in a name to a patentee and a disadvantage to the long-suffering public,—while at the latter it is purchasable by a large number."

Ghillany calls attention to the property possessed by diuretin of absorbing carbonic acid from the air and so becoming insoluble. He recommends that for dispensing purposes a solution of the drug in distilled water should be kept in well-stoppered bottles.

REFERENCES.—[1] "Rif. Med.," Nov. 30, 1891; [2] "Centralb. fur die gesamnte Therapie," No. 8, 1891; [3] "Cent. fur klin. Med.," No. 30, 1891; [4] "Munich. med. Woch.," No. 38, 1891; [5] "Therap. Gaz.," Mar. 15, 1892.

ETHYL BROMIDE.

Dr. Montgomery[1] makes a strong appeal for the more general use of this anæsthetic, for **Short Operations** and in **Gynæcological Practice**. He says: "It has an exceeding pleasant odour, in comparison with that of the other anæsthetics; the patients rapidly succumb to its influence; but small doses are required; it produces none of the unpleasant sensations of difficulty of breathing and feeling of suffocation. There is an absence of the stage of excitement or struggling, and anæsthesia is produced sufficient for ordinary slight operations and for many examinations before the patient is rendered unconscious. Thus the patient can obey the directions of the physician, change the position of the limbs or parts of the body, and yet not experience any pain, even when an abscess is incised or a wound probed.

"The effects of the drug are exceedingly evanescent, the patient recovering consciousness in less than a minute, and awaking from it as from a sleep, usually without any unpleasant effect. It is exceedingly rare for a patient to suffer from vomiting, which is a frequent sequel from the administration of ether. Its value in cases of labour is in that it can be administered with the onset of the pain, the patient, taking two or three deep inspirations, loses the sensation of pain, and yet is able to co-operate with the attendant in whatever may be desired.

"In cases of confinement, my method of administration is to begin the second stage of labour, using a Hawley inhaler, in the barrel of which the drug is placed. The patient holds it herself, and as soon as she has received a sufficient amount to render her unconscious, the inhaler drops from her hand. In this way the necessity of an assistant is dispensed with, and the patient is enabled to use the anæsthetic with the advent of each pain."

The author, who is professor of gynæcology in the Jefferson Medical College, states that he has used this anæsthetic in five hundred cases, and only in two was nausea a marked symptom, and no dangerous results attended it use. Frequently after its use in large quantities it produces an unpleasant garlic-like odour of the breath, which may continue for two days after its administration.

REFERENCE.—[1] "Therap. Gaz.," June, 1892.

ETHYL CHLORIDE (C_2H_5Cl).

There can be little doubt that in this substance we have a valuable **Local Anæsthetic.** It is a colourless mobile liquid, having a peculiar and pleasant odour, and a sweetish, burning taste. It boils at 12·5°, at 0° possesses a specific gravity of ·874. It is slightly soluble in water, but dissolves readily in alcohol. It is sent out for medicinal use in hermetically sealed glass tubes containing a little more than 2 drachms each. When required for use, the point of the tube is snipped off, and the warmth of the operator's hand is sufficient to cause a very fine jet of the chloride to be projected on the part to be anæsthetized.

It has so far been chiefly employed for **Dental Operations,** and we have seen very complete anæsthesia produced by its use. It should also prove serviceable in minor operations. The simplicity of the method of application is to be particularly recommended. A series of experiments have been made on the action of chloride of ethyl by Drs. H. C. Wood and David Cerna, from which they draw the following conclusions: (1,) That the chloride of ethyl is capable of acting as a general anæsthetic, but that it is eliminated with extraordinary rapidity, and that its action is extremely fugacious; (2,) That the anæsthesia which it produces is always accompanied by a fall of the blood-pressure, which is probably, at least in part, due to direct depressing effect of the drug upon the heart; (3,) That the action of the drug upon the circulation is in no way dependent upon its influence upon respiration, although it is not certain that the pronounced depression of the blood-pressure is not a factor in influencing respiratory movement; (4,) That, at least in the dog, chloride of ethyl produces at first an increase of the respiratory movement either in rate

or amount, or more commonly in each respect, but that finally respiration becomes slow, and at last stops almost abruptly; (5,) That usually, if not always, the cessation of heart-beat and the arrest of respiratory movement occur as nearly simultaneously as may be.

They believe that the fugaciousness of the action of the drug must interfere with its use as a general anæsthetic, and that its depressing effect upon the circulation is too pronounced for it to be a safe anæsthetic. It is most probable that if it should come to be employed in practical medicine as an anæsthetic, there would be a record of sudden deaths through cardiac failure proportionately even more numerous than those caused by chloroform. On the other hand, their research indicates very strongly that the small amount of chloride of ethyl which is used in producing local anæsthesia for dental purposes has practically no effect upon the human system, any of the drug that is absorbed into the system being eliminated in the course of a few minutes.

REFERENCE.—"Therapeutic Gaz.," April 15, 1892.

ERYTHROPHLEUM GUINEENSE.

The active principle of the bark erythrophlein has formed the subject of an investigation by Dr. Germain Sée[1]. It resembles in toxicity and action digitalin, and was used by the author in the following cases: Six, valvular or simple cardiac lesions; one, pulmonary phthisis with dry pericarditis; one, pulmonary phthisis without heart lesion; one, uræmic dyspnœa with interstitial nephritis; six, emphysema or asthma; four, nervous dyspnœa with or without tympanites. The medicinal dose is from $\frac{1}{40}$ to $\frac{1}{20}$ of a grain. This dose does not produce any digestive disturbance, and but slight modification of the condition of the heart, but the respiration is profoundly, constantly, and persistently changed. Dyspnœa, except of thermic origin, is diminished. There is a feeling of *bien-être*, an ease of respiration, which the patient himself remarks: the desire for air is satisfied, he breathes more freely.

REFERENCES.—[1] "La Médicine Moderne"; "Amer. Jour. of the Med. Scien.," p. 183, Feb. 1892.

EUPHORIN.

This drug, which was fully described in our last issue, has received the following eulogistic report from Dr. C. Curtis. He concludes, as the result of some two hundred clinical experiments, that: (1,) Euphorin is a powerful and safe antipyretic. It acts better when the fever is at its maximum and during the period of subsidence than in the early stage. The action of the drug shows itself in from half an hour to two hours, and lasts from three to six or even ten hours; (2,)

Defervescence is attended with a feeling of warmth and moderate sweating. When the temperature rises again the accompanying rigor is not severe ; (3,) It does not cause any serious secondary effects. Sometimes there is a little cyanosis, but never collapse ; (4,) Euphorin can be used in preference to any other antipyretic when a rapid and marked lowering of the temperature is required ; (5,) It answers fairly well as an antipyretic in surgical fevers ; (6,) It is a most potent antirheumatic. In **Acute Rheumatism** its action is certain, in the chronic forms its effect is also satisfactory, and it usually succeeds in cases which have resisted all other remedies ; (7,) In patients suffering from **Fever** the dose is 1·20 grammes, taken in from four to five doses. In febrile rheumatic affections from 1 to 2 grammes should be given in the twenty-four hours, in **Chronic Rheumatism** 1 gramme in three or four doses. On the average 1 gramme of euphorin corresponds to 2 grammes of antipyrin ; (8,) Euphorin has a sure analgesic action in **Neuralgia,** unless when it is due to a specific cause ; (9,) Euphorin is a powerful antiseptic, its action being intermediate between that of carbolic acid and that of corrosive sublimate ; (10,) It is one of the most effective disinfectants in **Thrush** ; (11,) In local applications it has advantages as compared with iodoform, iodol, aristol, etc. It is more powerfully antiseptic and less desiccating than dermatol ; (12,) Euphorin used locally in powder, or in an ointment with vaseline or lanolin, is also an anodyne, and promotes the healing of **Wounds** and **Ulcers.** It gives excellent results in surgery and gynæcology, and in **Diseases of the Skin** and **Syphilis.**

Reference.—"Ref. Med.," July 7, 1892.

EUROPHEN.

This substitute for iodoform was described in our last issue (p. 40).

Vulpius' states that the results of his bacteriological experiments agree in essential particulars with those of Siebel and Goldmann. It was tested upon anthrax bacilli, staphylococcus pyogenes aureus, and the bacillus pyocyaneus. Anthrax bacilli attained a slight growth once, but otherwise they seemed always to be rendered inert. Staphylococci were essentially checked in their development, although perhaps not so much as under the influence of iodoform. Pyocyaneus seemed not to be influenced by europhen. Experiments to determine its toxicity were made upon mice, guinea-pigs, rabbits, and dogs. It proved fatal to these animals in doses of ⅓ of a grain, 30 grains, 45 grains, and 1 drachm, respectively. Vulpius thinks the experiments indicate that europhen is less poisonous than iodoform. He used it locally in the form of ointment, powder, and gauze in fifty cases, and never saw any symptoms of poisoning, nor was eczema produced

The remedy promoted **Healing of Wounds.** He thinks his preliminary trials warrant his recommending it when rapid and vigorous granulations are to be excited.

Nolda[2] states that in four out of six cases **Soft Sores** healed in from seven to nine days, the remaining ones in twelve and fourteen days respectively. The parts affected were washed with perchloride of mercury solution (1 in 2,000) and the pure powder dusted on. In one case of a very extensive sore the author says that the half treated with europhen healed two days sooner than the other half treated with iodoform. Three cases of **Suppurative Otitis,** two of **Ulcer of the Leg,** and one of **Hard Chancre** did well with this drug.

REFERENCES.—[1] "Deutsche medicinische Wochenschrift," Oct. 29, 1891; [2] "Therapeutische Monatshefte," Oct., 1891.

FORMOL.

Berlioz[1] finds that this is a powerful antiseptic, destroying growths of the bacterium coli commune, the bacillus of Eberth, and that of Charbon.

It prevents the putrefaction of urine, or of bouillon, in the proportion of 1 grain to the 1000, and therefore ranks among the best antiseptics. Its toxic power is represented by the fact that a subcutaneous injection into a rabbit, in the proportion of 5 grains to the pound, does not produce death. If given in the quantity of 8 or 10 grains to the pound it produces instant effects, the animal at once going to sleep, and finally dying without convulsions.

Intravenous injections of ¼ of a grain to the pound are without effect in the rabbit. In the dog, death ensues after the intravenous injection of ¾ of a grain to the pound. It is completely eliminated by the urine in about twenty-four hours, and this secretion remains for twenty-four hours after, without undergoing any putrefactive changes. On the second day slight putrefaction ensues. Formol lowers the bodily temperature of animals 1° to 2°. It is interesting to note that Berlioz attempted without success to preserve guinea-pigs from the infection of Charbon by treatment with formol.

The author concludes his paper by stating that while formol is an antiseptic dressing and germicide, he would not recommend it as a surgical antiseptic.

REFERENCE.—[1] "Les Nouveaux Remèdes," March, 1892.

GALLACETOPHENONE.

A crude form of this drug is employed as a dye and is known in commerce as "Alizarine Yellow C." It is prepared by treating pyrogallic acid with acetic acid in the presence of zinc chloride, the result

being a powder readily crystallizing in yellowish needles, scarcely soluble in cold water but easily dissolved in hot water, alcohol, ether, and glycerin. It has the following formula :—

$$C_6H_2\begin{cases}OH\\OH\\OH\end{cases}CO\,CH_3 \text{ or } CH_3COC_6H_2(OH_3).$$

Drs. Goldenberg[1] and von Rekowski[2] recommend gallacetophenone as a substitute for pyrogallic acid, which it nearly resembles in composition but differs from in not producing the powerful reducing effects attributed to the latter. It is said to be absolutely harmless to animals, although it displays strong antiseptic qualities, the streptococcus aureus having succumbed to it within twenty-four hours.

Dr. Goldenberg recommends a 10 per cent. ointment in **Psoriasis, Eczema Psoriatiforme**, and **E. Seborrhœicum**, asserting that it acts as promptly as chrysarobin, with the advantage of entire absence of irritation or staining of the skin from its use.

REFERENCES.—[1] "New York Med. Journ." Feb. 6, 1892 ; [2] "Therap. Monatsh." Sept., 1891.

GOLD (Chloride of).

Calmette[1] claims to have neutralized and counteracted the effects of cobra poison on animals by means of chloride of gold.

Mr. A. A. Kanthack[2] records some experiments made by him in India, which appear to prove conclusively that the intra-venous injections of gold chloride are quite useless unless administered immediately after the bite, that a delay of three minutes is already fatal. The conditions under which such bites occur render this treatment of no practical value. The experiments were performed on rabbits, an injection of 10 to 15 cubic centimètres of a 1 per cent. solution being employed.

REFERENCES.—[1] "Annales de l'Institut Pasteur" ; [2] "Lancet," June 11, 1892.

GUAIACOL CARBONATE.

This substance, like Benzosol (which see), has been proposed as a substitute for creasote in the treatment of **Tuberculosis.** It is claimed for it that it is a single and chemically pure substance, with no smell or taste, and that it has no ill effect upon the digestive organs. If guaiacol carbonate be added to freshly-minced stomach and water, and the mixture be kept at 37° C. for twelve hours, it gives no decomposition reaction, and yields none of the chemical tests for

guaiacol. It is first decomposed in the intestine into guaiacol and CO_2. It hinders the development of organisms so frequently found in the stomach of the phthisical, and is thus of service. It is often found in the urine from half an hour to an hour after ingestion. Drs. Seifert and Hölscher administered the carbonate in doses of 0·2 to 0·5 grain, gradually increased to 6 grains in the day, to sixty phthisical patients. Details of four of these cases are given. They all stood it well. The appetite was sharpened, the body weight increased, the cough and expectoration lessened, the night sweats diminished, and even the abnormal physical signs are said to have been improved. The good effects show themselves gradually, and the drug should be continued long after the symptoms have disappeared. The authors say that the use of guaiacol carbonate is a distinct advance in the treatment of tuberculosis, and particularly in that of pulmonary phthisis.

REFERENCE.—"Berl. klin. Woch.," Dec. 14, 1891.

HÆMOL and HÆMOGALLOL.

Hæmol and hæmogallol of Merck, prepared according to the directions of Kobert, are obtained from blood. Hæmol is a brownish-black powder, and hæmogallol a reddish-brown. The introduction of these substances into therapeutics rests on the fact that the derivatives of the colouring matter of blood, obtained by the action of reducing agents, have a hæmatopoietic action both in health and disease. They are given in capsules in doses of from 0·1 to 0·5 gramme during the day. Healthy persons are able to take as much as 1 to 5 grammes of hæmogallol. Hæmol contains traces of zinc left by design. The zinc is beneficial in slight lesions of the stomach, which might result in ulcer. Given in the form of hæmol the zinc loses its caustic action, and does not cause nausea."

REFERENCE.—"Lancet," Mar. 5, 1892.

HYDROGEN PEROXIDE.

A somewhat novel use for this agent has been suggested by Dr. E. S. Stuver.[1] Having remarked on its great value as a germicidal agent and deodorizer, he considers that its most characteristic property is the extreme avidity with which it combines with and decomposes pus. No matter where situated, or how small the quantity, the presence of pus is at once indicated by the effervescing, foaming action produced by the oxidizing power of the peroxide of hydrogen. This peculiar property renders it exceedingly valuable in **Deodorizing** and **Cleansing Foul Ulcers, Abscesses,** or any pathological condition attended by a discharge, and especially so if the pus is tenacious, adherent, and difficult to remove.

He has used peroxide of hydrogen as a *diagnostic agent* to determine the presence of pus in deep-seated abscesses or inflamed glands in which commencing suppuration was suspected. In such cases, especially when the abscess or gland is in close proximity to important structures, as in the inguinal and axillary regions, this agent may be made to render material assistance, and lessen the danger of wounding important vessels and nerves.

His method of procedure is as follows: The peroxide solution is injected by means of a hypodermic syringe, into the suppurating cavity. This immediately produces oxidation of the contained pus, marked distention of the cavity, and stretching and elevation of the superimposed tissues, *thereby lessening the danger of wounding important structures.*

Before injecting the cavity, however, the surgeon should have everything in readiness to evacuate the abscess immediately when the distention occurs, otherwise unnecessary pain will be caused. The incision should be free, and the cavity thoroughly washed out with the peroxide solution until the foaming action ceases, and then dressed with bichloride of mercury gauze.

In **Diphtheria** the author uses 1 grain of mercury (bichloride) to 4 or 8 ounces of the solution, and employs it as a local application. In **Gonorrhœa** he uses the following as an injection, and it appears to be well calculated to meet the indications:—

℞ Hydrargyri Bichloridi gr. j. | Aquæ, q.s ad f℥vj.
Hydrogenis Peroxidi Sol. f℥ij | M.

Sig.—Inject, after urinating, two or three times a day.

For nose and throat affections, he combines the fluid extract of witch-hazel with a 1 in 3 solution of the peroxide. He lays stress on the importance of using a fresh preparation, which should be well corked and kept in a cool place.

A. N. Iakovleff[2] has made nine experiments on eight subjects, of whom some were suffering from chronic gastritis, some from nervous dyspepsia, one from cancer of the stomach, and one from hyperacidity of the gastric juice, while the eighth was healthy. In all but two cases the patients were given a 3 per cent. solution of H_2O_2—four cubic centimètres before breakfast, dinner, and supper. The patient with malignant disease and the one with hyperacidity took a 2 per cent. solution, four cubic centimètres from three to six times a day. The following is a summary of the results of these experiments: (1,) Under the influence of H_2O_2 the general acidity of the gastric juice and the proportion of free HCl invariably increase; (2,) The proportion of lactic acid always decreases, while in later stages of digestion

the acid disappears altogether from the gastric contents. The phenomenon should be attributed to the well-known antifermentative properties of H_2O_2; (3,) The digestive power of the gastric juice is markedly intensified; (4,) In the case of hyperacidity—as well as in another similar case in the author's private practice—the administration of the peroxide was followed by a distinct aggravation of all gastric symptoms, while in all others, including that of cancer, marked improvement was observed—the appetite improved, the epigastric pain ceased, eructations and vomiting decreased or entirely disappeared, the bowels became more regular, etc.

REFERENCES.—[1]Stuver, "Therap. Gaz.," March 15, 1892; [2]"St. Petersburg Inaugural Dissertation," 1892, No. 109.

IODIDE SALTS.

The comparative value of the potassium and soda salts formed the subject of discussion at a recent meeting of the Therapeutical Society at Paris. The recognition that potassium acted in large doses as a protoplasmic poison, has caused many to give a decided preference to the iodide of soda during recent years, and M. Huchard is known to have strongly recommended this course. He admitted at the meeting that it required much larger doses of the sodium salt to produce the same effect as the iodide of potass; on the other hand, the latter sometimes produced irritation of the kidneys. Mr. Constantine Paul, who was present at the meeting, expressed a decided preference for the potassium salt.

Some experiments made recently are of interest in this connection. Drs. Rohmann and Malachowski, of Breslau, considered that the ingestion of bicarbonate of soda, at the time when iodide of potassium is being administered, renders the blood alkaline, and, by preventing its decomposition and liberation of free iodine, symptoms of iodism will be prevented. Their practice is to give 40 to 50 grains of bicarbonate of soda twice a day, during the administration of the potassium iodide.

Dr. E. Q. Thornton ("Med. Age," May 10, 1892,) claims for the syrup of hydriodic acid that it is not only more pleasant to take than the alkaline iodides, but that it is superior in therapeutic efficacy. It never gives rise to gastric disturbances, and may even facilitate digestion.

IODOPYRIN.

This product is a chemical compound of iodine with antipyrin, in which an atom of hydrogen is replaced by iodine, thus $C_{11}H_{11}IN_2O$. It is only slightly soluble in cold water and alcohol, but readily soluble in hot. It is perfectly tasteless and without odour. This product has been tested in the clinic of Professor R. R. v. Jaksch, and is reported

upon by Dr. Egmont Munzer in the pages of the "Prager med. Wochenschrift," 1891, Nos. 4 and 5. The product was first prepared by Dittmar (*vide* "Berichte der chemische Ges. zu Berlin," 11, 1885).

Dr. Munzer says: "I have studied the action of this substance principally on two types of fever: (1,) On typhus abdominalis; and (2,) On pulmonary tuberculosis. Five cases of typhus are recorded, and in each instance the temperature was rapidly lowered to normal. In the cases of tuberculosis pulmonum the administration of the drug caused profuse sweating, and in every way the antipyretic action was all that could be desired." When iodopyrin is taken into the stomach it is decomposed into iodine and antipyrin.

REFERENCE.—"Dublin Med. Jour.," Jan., 1892.

IRON.

The use of iron by subcutaneous injection has formed the subject of elaborate study at the hands of Dr. Rosenthal. The preparations used are as follows: The so-called ferrum peptonatum is obtained by the decomposition of ferric chloride solution with solution of pepsin, as a brownish-yellow powder, readily soluble in water. This is applied in aqueous solution (1 to 10), one syringeful being given every second day. Ferrum oleatum diluted to 1 to 20 by olive oil, is used similarly. Of the two, the former is preferable, on account of its greater solubility and stability.

The author finds that iron can be detected in the urine from forty to fifty minutes after the injection is made.

It has proved useful in the treatment of **Anæmia,** where iron is not well borne by the stomach, and also in the treatment of **Neurasthenic Affections.** No unfavourable symptoms have been noted.

LACTUCA SATIVA.

The garden lettuce has been known to produce a mydriatic action on the eye when it has been used too freely. Galen,[1] when troubled in old age with sleeplessness, employed an extract of the leaves as an hypnotic. Lactucarium, which is prepared from the juice of the stem of lactuca sativa and l. virosa, long enjoyed a reputation as a **Sedative,** and has been used to replace opium when that drug was contra-indicated. More lately it was used to check cough in phthisis and pulmonary complaints, but of recent years has almost entirely fallen out of general use.

Interest may be revived in the medicinal uses of the plant by the announcement of the discovery of the alkaloid, which was effected by the students of the Research Laboratory of the Pharmaceutical Society. It appears in the form of flat needle crystals, closely re-

sembling those of hyoscyamine. Both the wild and garden varieties have the same alkaloid, it being most plentiful when the plant is in flower. The yield is about ·02 per cent.

A principle named lactucin was obtained from lactucarium many years ago by Ludwig.

Francois[2] described the action of lactucarium as resembling that of hyoscyamus. He said that it was neither narcotic nor intoxicating, but that it allayed pain, and diminished the rapidity of the circulation, and in consequence placed the patient in a more favourable condition as regards sleep. Fisher[3] distinguishes its action from hyoscyamus by the fact that its power of diminishing sensibility is preceded by stimulation of the nervous system.

It appears to stand midway between opium and hyoscyamus in some of its effects, and is decidedly less toxic than either. There appear to be reasons for a fresh study of the action of this substance which may fulfil many useful purposes when the use of more potent remedies is not deemed advisable.

REFERENCES.—[1]Galen, "De Aliment Facult.," lib. ii. cap. 40; [2]Francois, "Arch. Gen. de. Med.," June, 1825; [3]Fisher, "Lond. Med. Gaz.," xxv., p. 863.

LEDUM PALUSTRE.

This is a small evergreen shrub, popularly known as Marsh Tea. It flourishes in moist places in the northern parts of Europe, Asia, and America. It contains a stearopten called ledum camphor, valerianic and other volatile acids, and a principle called ericinol $C_{10}H_{18}O$, which is a colourless oil with a peculiar smell. Attention has been called to it by its recommendation as a **Diaphoretic** by Chamable.[1]

This plant at one time enjoyed great repute in the cure of many diseases. Linnæus remarks on the estimation in which it was held as a cure for **Pertussis,** and probably through his recommendation it obtained a place in the Swedish Pharmacopœia. It was extensively used at the beginning of the present century, and the inhabitants of Hungary found it of great efficacy in "an epidemic angina of a malignant character," which was probably **Diphtheria.** In Russia it was employed for **Intermittent Fever.** In Sweden **Cutaneous Diseases** were said to be benefited by it, disorders of the impetiginous class being treated by the external application of the decoction, and by the use of the infusion as a bath. Sticks taken from the plant have been boiled in beer to render it more intoxicating, and there can be little doubt that it possesses narcotic properties.

We believe the name Labrador tea is confined properly to the variety which is found in the neighbourhood of Hudson's Bay, ledum

latifolium, which has a broader leaf than the ledum palustre, although we are not aware that the properties of the two varieties differ.

M. Teste, a French physician, recommended it some years ago as a remedy for **Subacute Gouty Affections** of the smaller joints where the inflammation was not acute. He also found it useful to control the itching of the skin following **Mosquito Bites,** and it has also been used to control the irritation of **Gouty Eczema.**

A tincture of the plant may be made as follows : The small twigs and leaves, after being pounded to a pulp, are pressed, and the juice is mixed with an equal part by weight of rectified spirit. Dose 5 to 20 minims.

It appears that, in addition to its sedative properties, the drug acts as a stimulant and antiseptic to the skin and mucous membranes. A further study and trial of its action would be of great interest.

REFERENCE.—"Paris Med.," Aug. 24, 1891.

LIGHT.

"Light as a Therapeutic Agent" is the title of a paper in the "Practitioner" by Drs. A. Barry Blacker, and R. H. Clarke.

The authors commence with a description of the methods of treatment employed at Veldes, a small Austrian village in the neighbourhood of the Julian Alps. The special feature of the treatment is the exposure of the body without clothing to the action of sunlight and air. Regarded as a therapeutic experiment, the conditions are not sufficiently exact to allow of any positive conclusions distinguishing the effects of light from those of diet, regimen, climate, and change of scene and habit. But as all the other conditions may be found elsewhere, it is probable that the benefit some patients experience, after trying other health resorts in vain, may be due to the sunlight treatment.

It is suggested that light baths might be experimentally tested in this country in glass houses, like ordinary greenhouses, properly warmed and ventilated, and that the effects of sunlight might perhaps be supplemented by electric light.

After reviewing the physiological action of sunlight and electric light, the function of pigment in the human skin, the importance of distinguishing the effects of light from those of heat, etc., the authors state their conclusions as follows : "We think the evidence adduced, though not complete on the whole, supports the conclusion that the physical distinction between thermal and actinic rays in sunlight is physiologically important, and may be of therapeutic value. For our purpose it is sufficient to distinguish the factors of sunlight as light and heat. The former, including the chemically active rays, excites

the peripheral nerves, and in moderation stimulates nutrition and vitality; in excess, it produces various degrees of superficial injury, and reflex irritation of other parts, and ultimately involves the nervous centres. The stimulus of the chemical rays of certain intensity causes a deposit of black, or yellow pigment, in exposed parts, as a protection from injurious effects, and this protection must be very important to the organism, as considerable penalties are incurred in order to secure it. These considerations suggest that the more or less prolonged application of bright sunlight, and possibly of electric light also, to the whole surface of the body, might be employed with advantage to stimulate the nervous system generally, or possibly for some specific effect in special cases. At any rate it seems worth while to submit the question to the test of experiment, and this could probably be done without any great trouble or expense.'

METHYLENE BLUE.

This substance, which is well known as a staining reagent for the plasmodium of **Malaria**, has been recently added to the list of remedies for this disease. Guttmann and Ehrlich[1] claim that it possesses a very decided influence, febrile attacks ceasing in a few days, and the plasmodia disappearing from the blood after eight days. In a patient suffering from tertian ague, 7½ grains were given before the expected attack. Two hours afterwards slight strangury ensued, and the urine was coloured blue, but caused no other inconvenience. The shivering fit was very slight, as were also the rise of temperature and the critical sweating. In blood preparations taken shortly after, the plasmodia were not coloured. For the next six days the patient had daily 7½ grains of methylene blue, in separate doses of 1½ grains, at intervals from noon to midnight. No further febrile attack occurred, and the plasmodia vanished from the blood. A similar favourable result took place in a second patient suffering from quotidian ague, to whom the five doses were given at intervals of an hour, and begun between ten and twelve hours before the expected attack. This treatment was continued for eight or ten days after the cessation of the fever. Chemically pure methylene blue was used, and administered in capsule form. It has no unpleasant consequences which may excite uneasiness, the only disturbing effect being the form of spastic bladder irritation, which increased micturition. This may, however, be speedily relieved by a little powdered nutmeg.

Thayer[2] has since treated five cases in this manner. The dose administered was 1½ grains five times a day. In all the cases the urine was carefully examined, but at no time was albumen found. In all the cases in which methylene blue was given alone, slight strang-

ury followed within the first three days, which, however, was immediately relieved by nutmeg, and in the cases in which nutmeg was given at the commencement of the treatment there were no unpleasant results. The urine in all the cases assumed a deep blue colour; the fæces, although appearing as usual when passed, became blue on exposure to the air. With one exception, all the cases were of the more chronic and severe types of malarial fever, those in which the hyaline intra-cellular bodies and crescents have been found in the blood. It is in such cases that quinine is often very slow in its action, and that, even when quinine and arsenic are given together, organisms may be found in the blood for weeks and months. One case of tertian ague yielded almost immediately to the methylene blue, the organisms disappearing on the third day. In another case the organisms had not entirely disappeared in twenty-three days. This was a severe chronic case. In a third case, which appears to have been one of the more severe varieties, no organisms were seen after the ninth or tenth day. In none of the cases was there any chill later than twenty-four hours after the beginning of the administration of the drug. Thayer concludes that methylene blue has certainly a distinct anti-malarial action, a fact which is of great interest, and this treatment is certainly worthy of more extended trial.

Laveran makes a report upon this treatment. He injected the blue into the breasts of pigeons, in the dose of ½ of a grain, in cases where the blood of the birds showed the hæmatozoon. Notwithstanding the fact that the colour was seen in the blood, no effect was exercised upon the parasites.

To two patients who were suffering from malarial disease, Laveran also gave the drug, in the dose of 4 to 6 grains a day, until they had taken about two drachms of the drug, without producing any effect on the malarial organism.

As a result of his experiments, Laveran reaches the conclusion that methylene blue is utterly without effect, and that it simply serves to colour the urine blue.

G. Mya[3] also used methylene blue in malaria. He tried it in nine cases in the Ospedale di Santa Maria della Scala at Siena, with results which led him to the following conclusions: (1,) Methylene blue has in some cases a decided effect on the course of the malarial fever. This was particularly seen in three of his cases; (2,) In other cases, forming, according to his present limited experience, the large majority, the effect on the temperature curve was *nil*, or merely temporary. The plasmodia characteristic of the disease disappeared from the blood during the administration of the drug only in three

cases, and in these it is worthy of note that the treatment was more prolonged, and larger doses of methylene blue were used, than in the cases reported by Ehrlich and Guttmann. Methylene blue, moreover, causes (1,) Severe gastric pain, often accompanied by pyrosis ; (2,) Slight strangury, with first green and then deep blue discolouration of the urine. The urine was increased in quantity, in one case from nine hundred and forty to one thousand six hundred and seventy cubic centimètres in the twenty-four hours. The fæces were also stained blue. No reduction in the size of the enlarged spleen was observed in any case. Mya concludes that, in view of the uncertainty of its therapeutic effects, and the discomfort and even suffering often caused by its use, the proper attitude of mind with regard to methylene blue as a remedy for malaria is one of "the most absolute reserve with regard to its practical applicability."

REFERENCES.—[1] "Berlin klin. Woch.," No. 39, 1891 ; [2] "Johns Hopkins Hospital Bulletin," vol. iii., No. 19 ; [3] "Brit. Med. Journ.," March 19, 1892.

OUABAÏN ($C_{30}H_{46}O_{12}$).

This is the active principle of the ouabaïo wood, an aqueous extract of which is used by the Comalis of the Eastern coast of Africa as an arrow poison. The tree belongs to the genus Carissa of the family Apocynaceæ. It crystallizes in rectangular scales, excessively thin, and of a pearly aspect. It is absolutely white, without odour and without appreciable bitterness (the wood and its aqueous solution are exceedingly bitter). It is non-nitrogenous, and has no reaction upon coloured reagents, such as tournesol. It is slightly soluble in cold water ; 100 c.c. of this liquid, at 11° C., hold in solution ·650 gramme ouabaïn. It is very soluble in boiling water, and these solutions have a great tendency to become supersaturated. Its best solvent is alcohol moderately concentrated ; 100 c.c. of 85 per cent. alcohol, at 11° C., hold in solution 3·75 grammes of ouabaïn ; with heat this solubility is much increased. It is insoluble in chloroform, in anhydrous ether, and practically in absolute alcohol.

A short report on the action of the poison appears in the "Med Ann." for 1889. Its use in **Pertussis** was first suggested by Dr. Percy Wilde. Dr. Gemmell made practical use of the drug in this disorder with satisfactory results, which have since been repeated by observers in different parts of the world. (See "Annual," 1891, p. 367.)

Dr. Joseph Sailer, of Philadelphia, has made a very careful series of experiments upon animals with this principle, which are recorded at length in the "Therap. Gaz.," Nov. 16 and Dec. 17, 1891. Our space will only permit us to mention the principal points elucidated.

MM. Varigny and Langlois considered that the poison produced death by asphyxia. Dr. Sailer's experiments justify him in rejecting this statement, the cardiac movement having ceased in one case three minutes before the respiratory centres were paralyzed; but he is enabled to confirm their statement that the respiratory movements are first slowed and finally accelerated. The clinical application of this statement appears to be that the primary slowing may be maintained by repeated small doses, or in other words, it may be used as a respiratory sedative, in conditions of abnormal excitement, in the doses of 1 drop of the 1 in 1000 solution used by Dr. Gemmell.

In respect to its action on the heart and circulation, Dr. Sailer finds that it causes, first, a slowing of the pulse, due to a stimulating action upon the cardio-inhibitory function, and perhaps partly to a direct action upon the heart-muscle. At the same time there is a primary vaso-motor spasm, due to an action either upon the vaso constrictor fibres or the muscular coats of the vessels. The slowing of the heart may be so marked, in exceptional instances, as to overcome the vaso-motor spasm and cause a fall of pressure. Then there is a sudden and great increase in pulse-rate, caused by depression and final paralysis of the vagi, and, at the same time, increase in pressure, due partly to increased heart-action and partly to continued stimulation of the vaso-motor system. At last the heart-muscle is paralyzed, and in a few seconds the pressure also falls to zero.

The clinical deduction from this is similar to that we have mentioned in respect to its respiratory action. It appears probable that similar doses repeated at intervals would have the effect of slowing the action of the heart in tachycardia and allied conditions.

In respect to its action on the neuro-muscular system, the author arrives at the following conclusions: (1,) That it diminishes and finally abolishes reflex action by paralysis of the peripheral sensory nerves, and this paralysis then extends to the sensory nerve-trunk; (2,) That it paralyzes the striated muscles by direct action upon their tissue; (3,) That it paralyzes the motor nerves only when the action in the body is very prolonged or when a strong solution is applied directly to the nerve; (4,) There does not appear to be any action upon the central nervous system.

In respect to its action on the skin as an anæsthetic, Dr. Sailer produced decided insensibility of the cornea in one case, although it failed in three others. It is known that strophanthin will anæsthetise the cornea, but at the risk of producing inflammation in the human eye, and care in experimenting with ouabaïn in this direction is advised by the author.

Like other muscular depressants, ouabain is a powerful emetic when injected subcutaneously. It promotes defæcation and is a diuretic. It must be remembered, however, that these symptoms are the result of the drug when given in fatal doses and are not an indication for therapeutic use. In none of the experiments did it appear to affect the body temperature.

An excellent summary of the clinical use of this drug appears in the "Therap. Gaz.," Dec. 15, 1891. From Dr. Gemmell's experiments the standard dose for a child under five years is $\frac{1}{1000}$ grain every three hours in solution. This dose usually lessened the number of coughs and whoops. In two cases, however, where the children were much prostrated by the violence of the cough, $\frac{1}{500}$ grain, and latterly $\frac{1}{250}$ grain, was given every three hours. This is equal to about $\frac{1}{83}$ grain daily, which is nearly double the strength of the dose advocated by Prof. Gley, who estimates the maximum daily dose for an adult as 1 milligramme ($\frac{1}{65}$ grain). Probably this applies to its hypodermic use, when its action is more powerful, $\frac{1}{65}$ grain being considered a fatal dose.

In the "New York Med. Jour." for Sept. 25, 1891, Dr. I. Lindsay Porteous reports three cases of **Whooping-cough**, two of which occurred in children and one in an adult, in which marked improvement was almost immediately observed after the administration of this drug. To a child of fifteen months, Dr. Porteous gave $\frac{1}{1000}$ grain in solution every three hours. On the following day the child had only two whoops and less coughing, and at the end of a week was apparently entirely well.

For a child of four years of age, he ordered $\frac{1}{2000}$ grain every four hours, and here also cure was noted at the end of a week.

To the adult, a woman of forty-five years of age, he ordered $\frac{1}{500}$ grain every three hours, and here also rapid cure is claimed to have taken place.

Dr. Porteous maintains that the action of ouabain is evidently not cumulative. During the administration the pulse, temperature, and respiration are slightly lower.

It promotes the action of the skin after three or four days' treatment. The bowels act regularly, and the usual accompanying diarrhœa of whooping-cough is not, as a rule, present during the treatment. It, like strophanthus, increases the flow of urine.

The appetite in all the cases was increased. Dr. Gemmell likewise noticed this. The toxic effects are considerable slowing of the pulse and respiration, and the latter is the one to be particularly on guard against.

OXYGEN.

As far back as 1817, Reid,[1] of Dublin, advocated the inhalation of oxygen as a useful palliative in **Angina Pectoris.** Since then many medical writers[2] have recommended its use in **Anæmia** and various **Lung Affections,** also as a **Cardiac** and **Respiratory Stimulant** in **Asphyxia** due to poisonous gases, drug narcosis or general anæsthetics, and in extreme exhaustion such as is met with in late stages of the **Continued Fevers.** In our issue of last year Dr. Blodgett reported a case of **Pneumonia** in which the oxygen treatment appeared to be most beneficial. [3]Catlin commends it in cases subjected to prolonged surgical operations, where the system has been saturated with the anæsthetic, and from this cause defective reaction follows, and recovery is retarded. Wallian remarked on the superiority of gas freshly prepared over that which had been stored for some time, and advised that 800 to 1000 cubic inches should be inhaled at a sitting once or twice daily, also that with the exception of cases of asphyxia the gas should be freely diluted. He insisted on the necessity of deep and regular breathing, the lungs being filled to their fullest capacity, and care being taken that during the treatment no impediment should arise from a forced position of the body, or from the dress. Sedentary habits must also be corrected, and the daily use of chest gymnastics still further improved the results. [4] Brügelmann failed to find dissimilar effects whether he used large or small quantities of oxygen at a time. Hence he discarded it in favour of compressed air, and it is evident that he attaches importance to the regular and deep inhalation of an atmosphere under pressure, as a means of opening up portions of lung which being undistended by the shallow arhythmical breathing characteristic in the subjects of chronic lung disease) would eventually become atelectatic, and foster catarrh and suppuration. In cases in which these changes are already set up, he first passes the compressed air through a flask of carbolic acid, or eucalyptus or creolin solution, and the sitting may terminate beneficially with the inhalation of ammonium chloride. By this means the tough mucus is removed, and the disinfected mucous membrane heals.

Brügelmann speaks of great improvement in chest capacity following his treatment in recent pleuritic cases, while in valvular defects, if not too far advanced, the intra-thoracic pressure secures a mechanical lessening of the hypertrophied heart muscle, and relieves the strain ; but in tubercular cases he thinks inhalation is contra-indicated on account of the hard breathing dislodging tubercular particles which are borne into other parts of the lung, and form foci of inflammation.

The following extract from a recent editorial in the "Therap. Gaz.,"

(June, 1892), conveys a very just idea of the value of this agent: "A series of researches, carried out several years ago by two of the editors of the Gazette, indicated very strongly that oxygen gas was of the greatest possible value in the resuscitation of persons asphyxiated by ordinary coal or illuminating gas, it being possible to revivify animals apparently dead by the forced inspiration of oxygen. It seems, however, when we consider the matter rationally, that the value of oxygen as a remedy has the same distinct limitations which govern the employment of almost all other agents possessing curative powers. It is well known that the hæmoglobin of the blood will not take up more oxygen than is in the ordinary atmosphere, and it becomes a matter of grave doubt whether, in cases of anæmia or other disorders of the general system, inhalations of oxygen produce any effect whatever, except through the increase in respiratory activity of the patient, who voluntarily fills and empties his chest thoroughly while using the oxygen apparatus. It may be, however, that advantages are obtained by its employment in these conditions, and it will require further clinical experience to determine whether the oxygen itself has any direct effect under these circumstances.

"In pneumonia, however, the rationale of the employment of oxygen is entirely correct, provided the right side of the heart is not so engorged as to prevent it from doing its work. The main danger that threatens the patient is asphyxia, or failure of respiration, owing to the consolidation of a large area for breathing. It becomes evident that if one lung is so consolidated that respiration must be carried on entirely with the other, this remaining lung must take in double the quantity of air which it usually contains in order to provide the general system with its ordinary quota of oxygen. It also necessitates a large increase in the area of the blood-vessels, through the walls of which the gaseous interchanges of respiration take place, and it is perfectly just to suppose that the admixture of an increased quantity of oxygen with atmospheric air under these circumstances will permit the hæmoglobin in the red blood corpuscles to change into at least an approximate normal amount of oxyhæmoglobin. Oxygen is probably of great value under all circumstances where asphyxia is present through the imperfect oxidation of the blood."

REFERENCES.—[1] "Therapeutic Gazette," 1890; [2] "Med. Press and Circular," 1892; [3] "Brooklyn Med. Journ.," Aug. 1892; [4] "Therap. Monatsh.," March, 1892.

PARACRESOTIC ACID.

Paracresol,[1] obtained by Quriny from wood tar, is a more powerful disinfectant than either bromine, chlorine, or cresol. It is soluble in

all proportions in water, giving clear, neutral, and almost inodorous solutions. As an antiseptic it is more energetic than carbolic acid, a 5 per cent. solution killing the bacteria of anthrax in ten minutes. An aqueous solution, with a small quantity of glycerine, makes a good wash for the skin in **Measles** and **Scarlatina**, and is especially recommended for use among midwives.

Egasse[2] draws attention to the value of paracresotic acid as an antipyretic. It has been employed in the form of a cresotate of soda by Loesch, who found that doses of 6 to 8 grammes were perfectly well borne by adults. Demme has chiefly employed the drug in children for its antipyretic and antifermentative action. He finds it of great benefit in acute articular **Rheumatism**, having somewhat the the same action as salicylic acid, while it is better borne. In the catarrhal **Pneumonia** of children it has been employed in the dose of 10 centigrammes every two hours, and has shortened the course of the disease and rendered recurrences less frequent. In **Typhoid Fever** it diminished the diarrhœa. It also gave good results in the **Gastro-intestinal Catarrh** of nursing women. The maximum daily dose for young children should not exceed from 0·5 to 1 gramme, but young adults may take from 3 to 4 grammes daily.

References.—[1] "Lancet," April 2, 1892; [2] "New York Med. Rec.," April 9, 1892.

PENTAL.

This name has been given to tri-methyl-ethylene, which has been again brought forward as an anæsthetic, especially useful for short operations. $C_5H_{10}=\frac{CH_3}{CH_3}>C=CH-CH_3$. It is colourless, but has a very pungent odour. It is insoluble in water, but freely so in alcohol and ether (sp. gr. 0·6783). It is administered in the same way as chloroform, the administration seldom occupying more than four minutes. Sensibility is lost before consciousness, and the latter returns in about four minutes.

Weber[1] states that he has employed it in two hundred cases of **Small Operations** (tooth extraction, opening abscesses, etc.). It was more pleasant to take than chloroform. Even a moderate degree of excitement was seldom produced by it. In two cases, after some excitement, slight tetanic convulsions occurred, but they disappeared as the narcosis proceeded. The patient soon comes round. He is at first a little unsteady, but this soon passes off. Headache, vomiting, or even well-marked *malaise*, were never noticed. No definite effect on the pulse or breathing was observed. The corneal reflex disappeared late, and in some cases the pupils dilated widely. There

was no salivation. The pental was sprinkled on a handkerchief, anæsthesia being quickly induced. So much has to be used in this way, owing to evaporation, and the smell is so strong, that the author now uses a modification of Junker's apparatus. The consumption is thus lessened, and in two, or at most three, minutes the operation may be begun. Occasionally laughing occurs. The author says that he has often extracted teeth at a stage when the patient would still open his mouth if told to do so, and yet no pain be felt. It has also happened that, after consciousness has apparently returned, the anæsthesia may be sufficient to allow another stump or so to be drawn without pain. Weber shows that other bodies found in the formerly used amylene are unsuitable as anæsthetics, and that the one boiling at 38° C. should alone be employed.

These statements only confirm those of Hollaender[2] who used pental in a similar manner, but who claims that 10 to 12 c.c. of pental is sufficient to produce insensibility in forty to forty-five seconds. He considers it quite devoid of danger, and in the numerous cases since recorded, there appears to have been a great immunity from unpleasant symptoms, but A. Hagler[3] mentions a case where dyspnœa was produced rendering artificial respiration necessary. His experience in forty operations was otherwise favourable, and he found it possess an advantage over bromide of ethyl on account of the absence of salivation during the administration. He employed 10 c.c. for adults and 5 c.c. for children. Insensibility came on in from one to two minutes and was usually gentle, but excitement occurred sometimes. Anæsthesia lasted from three to seven minutes, during which the eyes are widely opened and the pupils dilated. The cornea reflex persists in the majority of cases, although the arms hang inert. This fact seems to be of importance to those accustomed to give chloroform, and judge by the sensibility of the cornea when the patient is ready for the operator to commence. Consciousness is usually sufficiently preserved to enable the patient to obey any imperious command.

Drs. H. C. Wood and David Cerna, as a result of a few experiments, both by inhalation and by injection into the veins, found that each time anæsthesia was produced by pental there was a marked fall of the arterial pressure. Thus, in the first inhalation, the pressure had fallen from 154 to 100 millimètres, when anæsthesia was complete; while during the second anæsthesia the pressure fell from 160 to 90. In each anæsthetization the respiratory rate was increased, although the extent of the respiratory movements most of the time was not distinctly above the normal.

In no case was death caused by inhalation of pental.

In one experiment Wood and Cerna showed that the heart was at once affected much more severely than the respiratory centres ; that it failed to recover itself, and stopped beating before the arrest of respiration : indeed, full, deep inspiration occurred a half-minute after complete arrest of the circulation.

In conclusion, they are led by their experiments to believe that pental will probably prove to be a dangerous anæsthetic, and if extensively used will produce death by cardiac arrest. It is probable, also, that the after-effects of pental, in the human being, would be disagreeable ; at least they repeatedly noticed in the dog a peculiar wild excitement directly after the anæsthesia from pental had passed off.

REFERENCES.—[1] "Munch. med. Woch.," Feb. 16, 1892 ; [2] "Therap. Monatsh.," Oct. 1891 ; [3] "Cor.-Bl. f. Scheweiz. Aertze.," N. 6, 1892.

PHENATE OF COCAINE.

This salt of cocaine is preferred by many physicians to the hydrochlorate. The following formulæ, which are given by the "Journal de Médecine," Paris, may be found useful :—

℞ Phenate of Cocaine gr. xv | Absolute Alcohol ʒijss

Or,

℞ Phenate of Cocaine gr. xv | Spirits of Ether ʒijss

For hypodermic injections, or for dropping in the ear in cases of **Otalgia**, the following may be employed :—

℞ Phenate of Cocaine, gr. jss

Sig.—Dissolve in 1½ drachms of alcohol, and add equal quantity of distilled water. Of this from 10 to 30 minims may be used at a time.

For atomization for inhalations in **Affections of the Larynx** and **Bronchial Tubes**, phenate of cocaine may be used as follows :—

℞ Phenate of Cocaine gr. jss | Dilute Alcohol ʒijss
Menthol gr. iv

One-fifth part of this solution may be employed in an atomizer during the day.

As a powder for the treatment of **Acute** or **Chronic Nasal Catarrh** :—

℞ Phenate of Cocaine gr. iij | Powdered Boric Acid gr. xxx

Or,

℞ Phenate of Cocaine gr. iij | Acetanilide gr. xxx

Or,

℞ Phenate of Cocaine | Powdered Convallaria Flowers
Menthol āā gr. iij | Subnitrate of Bismuth āā gr. xxx

Finally, the following may be employed for this purpose :—

℞ Powdered Tormentilla Root | Powdered Coffee āā ʒjss

For **Insufflation into the Larynx** the same journal also recommends phenate of cocaine 1½ grains, and antipyrin, 45 grains.

For **Gastric Pain** the following may be given :—

℞ Phenate of Cocaine gr. ¾ | Acetanilide gr. xv
M.

Sig.—Divide into ten powders, and take 1 or 2 powders in the morning in cases of **Acute Catarrh of the Stomach** or the **Vomiting of Pregnancy.**

The following may also be used :—

℞ Phenate of Cocaine gr. ¾ | Subnitrate of Bismuth gr. xxx
M.

Sig.—Make into five powders. Take 1 powder each morning, or, in the case of **Gastralgia**, one hour before the time for the habitual attack of pain.

Or,

℞ Phenate of Cocaine gr. j | Powdered Condurango g. xv
M

Sig.—Make into ten powders, and take a powder in the morning early in case of **Cancer of the Pylorus.**

PHENOCOLL (Hydrochlorate of).

This was fully described in our last issue (p. 62).

Experiments on animals by I. Ott[1] show that it produces general paralysis of the cerebro spinal axis. On rabbits the force and frequency of the heart was reduced, and a cyanotic condition of the ears produced. It is a poison to the respiratory centre, reduces vascular tension, and lowers the temperature.

Albertoni[2] reports a series of thirty-four cases of **Malarial Fever** which were treated with phenocoll. Of these, twenty-four were permanently cured, in five the result was *nil*, and in the remaining five it was doubtful. In some of the cases which were cured the disease was very severe, and quinine had done little or no good. The dose of the phenocoll used was always 1 gramme, given in powder or solution, from five to seven hours before the attack. The substance produces no disagreeable effects, and its taste is easily masked by sugar. The attack was cut short after one, or at most two, doses, but the administration of the drug was continued for some days after the cessation of the fever in order to prevent relapse.

P. Connheim[3] found that an antipyretic effect could be produced by doses of 4 grains, and the largest dose necessary was 15 grains. He gave 67½ grains in one day as the maximum. He found it useful in **Hectic Fever,** the minimum temperature being reached three or four hours after the dose. Like Herzog,[4] he found the fall of temperature accompanied by profuse sweating, which in the seventeen cases of phthisis quoted by the latter author, must have seriously lowered the vital powers. The urine was rendered dark, but contained no albumen or bile.

It relieved pain in some cases of **Acute Rheumatism,** but was

useless in the chronic forms. It did not prove of much service as an anti-neuralgic, although it was used with fair success in the **Neuralgia of Influenza.**

REFERENCES.—[1] Ott, "Notes on New Remedies," Aug., 1891; [2]Albertoni, "Rif. Med.," Jan. 5, 1892; [3]Connheim, "Therap. Monatsh.," Jan., 1892; [4]Herzog, "Deutch. med. Woch.," No. 31, 1891.

PIPERAZINE.

This is a compound closely allied to spermine, which we described in our last issue. M. Vogt claimed that it is a direct solvent of uric acid crystals, and that this fact can be demonstrated in the test tube. Dr. J. H. Brik[1] says that **Hard Renal Calculi** and **Fragments of Stone** are dissolved with decided difficulty, and may lie for days in a 1 per cent. solution of piperazine partly undissolved, but if the piperazine solution flows over the concretion in a continuous stream its action is much more marked.

Fifteen grains of piperazine dissolved in water can be detected in the urine in about two hours after having been administered. Its effect upon the excretion of urine and urea have been variously reported upon. Vogt says that the quantity of urine is diminished by one-third, but the quantity of urea is increased. Drs. Brik, Ebstein, Sprague and Heubach found that, after the administration of 15 grains of piperazine, there is an increase in the quantity of urine passed in twenty-four hours. If the administration of the remedy in this dose is stopped, or if it is given in smaller doses, the volume of urine becomes less, so that it fluctuates within nearly normal limits. The specific gravity varies inversely as the quantity. Drs. Heubach and Kuh detected only a slight increase of uric acid in the twenty-four hours. Ebstein found a diminution of the acid reaction. Brik gives his clinical experience of ten patients who passed uric acid in excess, and came to the conclusion that it was the best solvent for this substance. He used the following mixture, each dose being taken in a glass of water:—

R Piperazini Puri	gr. xv	Syr. Aurantii Cort.	f℥v
Aq. Destill.	f℥v	M.	

Sig.—To be used during the day.

Drs. Biesenthal and Schmidt[2] report seven cases in which the remedy has been tried. Four of the cases are given in detail. In three of the latter, who were gouty patients and had attacks of **Gout,** marked relief was obtained. The fourth patient had violent attacks of **Renal Colic.** On the first day the piperazine was used, an extraordinary quantity of gravel was passed. After the second dose, on the next day, large quantities of gravel were passed several times,

and almost immediate relief was experienced. Similar results were obtained in other cases. They speak very highly of the remedy and suggest that as it is non-irritating to the mucous membranes a 1 or 2 per cent. solution may be used for washing out the bladder when vesical calculi are present. They further recommend the use of hypodermic injections into gouty deposits around joints. The substance has very little taste, so that no difficulty occurs in administering it.

REFERENCES. — [1] "Wiener medicinische Blätter," Dec. 10, 1891; [2] "Berliner klinische Wochenschrift," Jan. 11, 1892.

SALICYLIC ACID.

To increase the solubility of salicylic acid in water the addition of 1 part of acid to 100 parts of glycerine and 150 parts of water gives the best results. This mixture is clear and miscible with water without any alteration.

REFERENCE.—"The Lancet," March 5, 1892.

SALOPHEN.

This derivative of salol is obtained by treating paranitrophenol with salicylic acid, reducing the nitrophenol by means of zinc and hydrochloric acid into an amide, and acting on this with acetic acid. It occurs in small white scales, which contain about 50 per cent. of salicylic acid, and are almost insoluble in either hot or cold water, but very soluble in alkaline solutions, alcohol or ether. Its reaction is neutral, it has neither taste nor smell, and burns with a smoky flame, leaving no residue. The gastric juice has no effect on salophen, but on coming into contact with the pancreatic or intestinal juices (or if subjected to the action of alkalies outside the body) it splits up into salicylic acid, and a non-toxic constituent—acetyl-paramido-phenol. These substances are excreted by the kidneys, but any of the undecomposed drug is thrown off by the bowel. Siebel's[1] researches lead him to conclude that: (1.) Salophen is superior to salol, being much less poisonous, and having neither taste nor smell; (2.) That no advantage is gained by raising the dose beyond 5 or 6 grammes daily, since, with an increased dose, less per cent. is decomposed.

Guttman commends salophen in **Articular Rheumatism,** giving 5 to 6 grammes daily, in the form of pill or compressed tablets.

Froblich,[2] from the results of experiments in thirty cases of **Acute Rheumatism,** reports that it is useless in large effusions, and of but slight value in chronic rheumatism. It does not prevent heart complications or relapse. In acute cases it arrested the pain in three to four days, and the joints are relieved as regards swelling in six or eight days. He considers it preferable to the salicylates, because it

does not irritate the stomach, and can be given for a long period, and in large doses, without unpleasant effects, and also because it is tasteless.

REFERENCES.—[1] Siebel, "Therap. Monatsh.," Jan., 1892; Frohlich, "Wien. med. Woch.," July 9, 1892.

SOLANIN.

Desnos[1] reports that he has used this remedy in a large number of stomach affections—**Gastralgia, Dyspepsia** accompanied by pain, **Alcoholic Gastritis** with or without dilatation of the stomach, etc. In a case of **Ulcerative Gastritis** with hæmatemesis, in a case of old gastric ulcer, and in one of **Cancer of the Pylorus** with vomiting, the painful symptoms quickly disappeared under the use of solanin. Desnos gives the drug in pills, hypodermic injections causing too much pain. The usual dose is 5 centigrammes given half an hour before meals; when the pain is very acute, solanin may advantageously be given in a gummy solution. The total amount given in the twenty-four hours never exceeded 15 centigrammes.

The great objection to the extended use of this glucoside is its high price. It would be of practical advantage if clinical trials of the tincture of dulcamara, from which this principle is extracted, were made. An account of the physiological action of solanin will be found in the "Annual," 1889, p. 66. We have employed it with good results in **Spasmodic Torticollis.**

REFERENCE.—[1] Desnos, "Sem. Méd.," March 23, 1892.

SOMNAL.

This was described in our last issue, and is a compound (mixture?) of chloral, alcohol, and urethane. O. M. Myers[1] speaks highly of its powers as a hypnotic. He says that therapeutic doses do not affect the pulse rate, and produce only a very slight transitory rise of arterial tension. Toxic doses rapidly reduce both pulse rate and blood pressure. Ordinary doses produce a full slow respiration; toxic doses make the respiration rapid, shallow, and irregular. Sleep is produced by therapeutic doses without perceptibly affecting any other part of the system; somnal should therefore act directly and primarily on the cerebrum. Somnal is particularly valuable in **Sleeplessness** mainly of nervous origin, and in that occurring during convalescence from acute disease. It is less reliable in the insomnia due to pain or syphilitic disease, and has apparently no influence over that due to acute inflammatory conditions. In **Whooping Cough, Asthma, Nervous Cough,** and **Chorea,** however, it possesses decided sedative properties.

REFERENCE.—[1] Myers, "New York Med. Rev.," March 12, 1892.

STRONTIUM.

Until quite recently our information regarding the therapeutics of strontium was most unsatisfactory, on account of the difficulty of separating it from its commercial impurities, especially barium, for which it manifests great affinity; and as the presence of the latter, even in minute proportion, is sufficient to determine toxic effects, its imperfect separation from preparations of strontium, brought the latter under the same stigma.

To M. Paraf Javal we owe the process for producing strontium salts in a state of purity, and experiments with these new compounds have proved the fallacy of the above conclusion, and established their claim to be considered innocuous.

M. Constantin Paul,[1] employing strontium lactate, states his experience as follows: (1.) That it is not toxic; (2,) That it is not diuretic; (3,) That it rapidly diminishes the **Albuminuria** of tubular or parenchymatous nephritis, but that on stopping the drug the albuminuria returns; (4,) The diminution of albumen is in all cases followed by an amelioration of all other symptoms; (5.) That to be of use the remedy must be employed before the period in which urinary insufficiency and uræmia develop; (6,) That a high temperature is not (?) contra-indicative of the use of strontium in parenchymatous nephritis. He considers it valuable for relief of **Albuminuria in Parenchymatous Nephritis due to Rheumatism, Scrofula,** or **Gout,** or **Albuminuria occurring during Pregnancy,** or **after Delivery.** In infectious albuminuria, or that due to cardiac disease or syphilis, it is of little value, and quite useless in the albuminuria of phthisis or interstitial nephritis.

M. Dujardin-Beaumetz[2] confirms these results, but attributes the diminution of albumen to the favourable influence of the drug on the digestive functions in Bright's disease, rather than to any specific relation to the primary lesion.

M. Sée,[3] selecting strontium bromide as the most soluble salt, employed it in thirty-two cases of **Dyspepsia, with Hyperacidity or Dilatation of the Stomach, with pain and flatulence:** the improvement was rapid and marked, especially in cases of cardiac or renal origin. In eight cases of deficient acid secretion, the same good results accrued. MM. Constantin Paul, Sée, Féré, and Laborde,[4] found that in **Epilepsy,** strontium bromide meets the same indications as the potassium salt, not only without manifesting any of its disagreeable effects, but that symptoms of bromism, induced by the latter, passed rapidly away when strontium bromide was substituted, and did not return. Hassan[5] insists on the utility of strontium nitrate in

Chronic Rheumatism, claiming that under its use the articular swellings rapidly decreased, the local temperature was lowered, and all the phenomena caused by the drug were favourable.

DOSE.—M.M. Paul and Dujardin-Beaumetz employed a solution of 2 ounces of strontium lactate to ½ a pint of water, giving a dessert spoonful morning and night. M. Sée gave 30 to 45 grains of bromide of strontium in three daily doses, but 4-gramme (62-grain) doses thrice daily, have been employed without ill effects.

REFERENCES.—[1] "Les Nouveaux Rémedes," Dec. 8, 1890; [2] Ibid., Nov. 4, 1891; [3] "La France Médicale," Oct. 30, 1891; [4] "La Médicine Moderne," Oct. 22 & 29, 1891; [5] "Bulletin Générale de Thérapeutique," No. 44, 1891.

STRYCHNINE.

Maurel[1] records a series of experiments concerning the action of drugs on leucocytes. He finds (1,) That 5 centigrammes of the sulphate of strychnine is sufficient to rapidly kill the leucocytes in one hundred grammes of human blood, representing about one kilogramme of the body-weight; (2,) That under doses of 2 centigrammes of the drug, for the same quantity of blood, the leucocytes can only live a few hours, the fatal result, though tardy, being the same; (3,) That in poisoning by strychnine, the death of the leucocytes and that of the animal occur simultaneously; (4), That the death of the elements of the blood under strychnine is due to a direct action, and *not* to the death of the animal; since in other poisonings, notably those produced by curare and cyanide of potassium, the leucocytes survive the death of the animal: (5,) That in all these experiments the hæmoglobin remains unaffected even after the death of the cells; (6,) That, finally, to judge from the general results obtained, especially from the simultaneous death of the animal and the leucocytes, these play an important *rôle* in the poisoning by strychnine.

He further observes that while atropine will destroy the leucocytes in human blood, the same quantity in the same proportion of rabbit's blood produces no effect. He also found that pilocarpine, in doses of 10 centigrammes, was sufficient to kill the leucocytes in one hundred grammes of human blood. He considers that atropine and pilocarpine antidote one another, and that this action depends upon their influence on the leucocytes.

REFERENCE.—[1] "Bull. Gén. de Thérap.," March and April, 1892.

SULPHAMINOL (or Thio-oxyphenyldiamine).

Originally brought forward as a disinfectant, this drug has so far proved absolutely inert. Its introduction into the body was stated to be followed by its decomposition into carbolic acid and some sulphur

compounds. Dr. Wojtaszek, however, finds that large doses produced no effect whatever when administered to animals, either hypodermically or by the mouth. As an application to open sores, it also proved absolutely inert as regards any disinfectant action.

REFERENCE.—"Przeglad Lekarski."

TELLURATE OF SODIUM.

This was recommended as a remedy for the **Night Sweats of Phthisis** some time ago by Combemale. It has recently been employed at the Madrid General Hospital by Dr. Cerbrián.[1] He reports that it can be relied upon for this purpose, the second dose being generally followed by marked diminution of diaphoresis, and the third, "with extremely rare exceptions," stopping it altogether. The remedy is well taken, and is eliminated in a few hours. It produces no appreciable effect on the pulse, the respiration, or the temperature, and in no way modifies the course of the disease. It has the disadvantage of causing loss of appetite, which is only recovered ten or twelve days after the use of the drug is discontinued. It has also a slight hypnotic effect, and in one case toxic symptoms (vomiting, general *malaise*, restlessness, and intense headache) so regularly followed each dose that it had to be abandoned. The most serious obstacle, however, to the general use of tellurate of sodium is the intolerable garlicky smell which it communicates to the breath and to the perspiration. This almost invariably becomes perceptible after the second dose, and marks the commencement of its antidiaphoretic effect. The remedy was used in the form of pills, each containing 3 centigrammes.

The author thinks that its effects are due to an inhibitory action on the nerve of the sweat glands. He does not recommend it in advanced cases, as it is apt to produce diarrhœa which is difficult to control.

REFERENCE.—[1] "Siglio Medico," Nov. 8, 1891.

TESTICLE JUICE.

The clinical results of this preparation, which is also known as "Brown-Séquard's Fluid," were fully considered under the article "spermine," in our last issue. We had very numerous inquiries respecting the dose and administration of this substance, and we have been furnished by Prof. Brown-Séquard with the following particulars: –

METHOD OF USING THE ORGANIC EXTRACT. – By *Prof. C. E. Brown-Séquard* and *A. D'Arsonval, M.D.*

It should be injected subcutaneously, but should not be injected pure. Pravaz's syringe should be only half-filled with the liquid, then filled up with distilled water, quite recently boiled.

All the vessels used, together with the syringe, the tube and the

skin, should be carefully washed with carbolised water (1 500) before the injection.

An injection of from 2 to 8 grammes of the liquid, as above, should be made in several punctures, at least twice a week. It would be almost useless to continue if there was no improvement in about three weeks. The injection should be made in the abdomen, between the shoulders, or in the buttock. The whole length of the tube should be inserted under the skin, and parallel with the surface.

If the treatment is directed against senile weakness, it should be continued for three months, and re-commenced for the same period when the patient requires it. The bottle should be kept carefully corked, and in a cool place. Water should never be mixed with the liquid. Its use should be stopped if it causes much trouble. If the puncture be painful (which is very rarely the case), the liquid should be mixed with twice instead of once its volume of water, as stated above. Application for the "Organic Extract" may be made to Prof. Brown-Séquard, Physiologic Laboratory, College de France, Paris, but it must not be sold.

THILANIN.

Siebel designates by this term the product of the action of sulphur on lanolin. It is described as a brownish-yellow unctuous substance, resembling ordinary lanolin in consistency, and as containing sulphur in the constant proportion of 3 per cent., but whether this is combined with cholesterine or the fatty acids is undetermined.

Saalfield[1] recommends it as a valuable non-irritant application in certain forms of **Eczema.**

REFERENCE.—[1] "Therap. Monatsh.," 1891, No. 11.

THYMACETIN.

This is a substance prepared by Hoffman, of Leipsic, which bears the same relation to thymol that phenacetin has to phenol. Its chemical formula is as follows :—

$$C_6H_2CH_3C_3H_7 \begin{cases} OC_2H_5 \\ NH(C_2H_2O). \end{cases}$$

It is a white crystalline powder, slightly soluble in water.

Jolly[1] reported that it failed in true migraine although the dose was increased from ¼ of a gramme to 1 gramme. It was as useful in other forms of **Headache** as phenacetin. It produced hypnotic effects in sixteen out of twenty-six patients upon whom it was tried. The pulse was accelerated, and fullness and noises in the head were sometimes complained of. The dose used was ½ a gramme.

REFERENCE.—[1] "Meeting of Berl. Gesel. fur Pysch. and Nerv.," Dec. 14, 1891.

TRIONAL and TETRONAL.

Further experiments with these two substances, which were described in our last issue, have been made. Schaefer[1] reports that both have a marked hypnotic and sedative action, the latter being more evident in the case of tetronal. Trional has a more sure and prompt effect in the **Sleeplessness** connected with the various forms of **Neurasthenia, Functional Psychoses,** and **Organic Brain Disease.** It is useless in the morphine and cocaine habits, as well as in the sleeplessness due to pain. Tetronal is indicated in psychoses where bodily restlessness of moderate degree prevents sleep. Neither drug is to be recommended in cases of much mental excitement with marked impulsion (*Bewegungsdrang*). In comparison with sulphonal, the action of trional and tetronal is more prompt and vigorous. In the above named conditions, with bodily restlessness, these drugs are efficient, whereas sulphonal fails. As sedatives in violent psychical and motor excitement they cannot take the place of hyoscine. Only occasionally was there slight digestive disturbance, and there were no ill-effects produced in the heart, lungs, or kidneys. Other effects, such as weariness, drowsiness, depression, and occasionally giddiness and unsteadiness in gait, were only at times noted. After long administration the discontinuance of these drugs produced no striking symptoms, and they did not lose their therapeutic effect after lengthened use. He employed doses of either drug, of 1 to 2 grammes, given in hot milk or wine, at bedtime. Sleep followed in ten to twenty minutes. He considers that single doses of 3 to 4 grammes, and divided doses during the day amounting to 6 to 8 grammes, may be given in safety.

Trional was given in seventy-seven cases, with 14 per cent. of failures; and tetronal in forty-nine cases, with 16 per cent. of failures.

The conclusions reached by Dr. Ramoni, after a trial these drugs on fifty-one insane men, are as follows: (1,) The two new hypnotics are superior to sulphonal and chloral; (2,) The patient awakes more easily, and there are no unpleasant after-effects, such as nausea, vomiting, loss of appetite, etc.; (3,) The action of the drugs is rapid (thirty to sixty minutes); (4,) Trional is superior to tetronal, the sleep induced by the former being sounder and more lasting; (5,) The sleep after either of the drugs lasts on the average six to eight hours, and is not disturbed by dreams.

REFERENCE.—"Berlin. klin. Woch.," No. 29, 1892.

TROPACOCAINE.

A new alkaloid has recently been isolated by Giesel[1] from the leaves of a "Small-leaved Coca-plant" of Java; and its chemical constitu-

tion and properties have been thoroughly studied by Liebermann, who proved that the substance was benzoyl-pseudo-tropeïn, and succeeded in separating the pseudo-tropeïn, and then from it made benzoyl-pseudo-tropeïn synthetically.

Pseudo-tropeïn from the Java coca is considered by Liebermann to be chemically identical with the pseudo-tropeïn from *Hyoscyamus niger;* and it therefore belongs to the atropine series (tropeïn group of Ladenburg).

From the presence of benzoyl-pseudo-tropeïn in a species of coca-plant, it might be expected to resemble cocaine in physiological action; but, on the other hand, its chemical constitution points to a physiological action not unlike that of atropin. Actual experiment has shown that benzoyl-pseudo-tropeïn is a powerful local anæsthetic, resembling, but not identical in local action with, cocaine. In the eye it causes neither the ischæmia characteristic of the *true anæsthetics* (cocaine), nor the marked irritation and hyperæmia of the group of substances called by Liebreich *Anæsthetica dolorosa;* but is physiologically a connecting link between the two classes.

The synthetical hydrochlorate of the base, if dissolved in physiological salt solution, seldom causes even temporary smarting or hyperæmia; but the preparation made directly from the leaves is more irritating, probably because of slight impurities. The alkaloid is almost insoluble in water, and the synthetical hydrochlorate of benzoyl-pseudo-tropeïn has been used in all experiments on which the present paper is based.

The chemical name of the alkaloid (benzoyl-pseudo-tropeïn) seems unsuited for medical purposes, and tropacocaine has been substituted for it by Dr. Arthur P. Chadbourne,[3] of Boston (U.S.A.), who read a valuable paper on its physiological action at the recent meeting of the British Medical Association. From his experiments, which were performed in the Pharmacological Institute at Berlin, the following results were obtained :—

Nervous System.—With rabbits, as with frogs, the different parts of the central nervous system, beginning with the most anterior and gradually extending posteriorly, seem to be first stimulated and later depressed; death occurs, however, before the paralytic action has become as great as in frogs. The stimulation of the cerebrum is followed by depression; and the inco-ordination of movement is followed by loss of equilibrium, from the action on the cerebellum and medulla oblongata. During the comatose stage the general stimulation of the cutaneous reflex passes into depression. The convulsions cease after division of the cord below the medulla,

and show no tendency to return even if the animal is left quiet until recovery, nor can they be produced by artificial stimulation. With cocaine also no convulsive element was present, nor could it be produced artificially.

Local Cutaneous Action.—Comparing the results of over thirty experiments with a like number of cocaine control experiments, it seems that (1.) Tropacocaine causes complete local anæsthesia of the skin more quickly than cocaine; (2.) The local anæsthesia lasts on the average longer than cocaine; (3.) The extent of the anæsthesia is possibly greater with tropacocaine; (4.) A ½ per cent. tropacocaine solution causes in most cases marked diminution in cutaneous reflex near the point of injection, but with a similar cocaine solution this is slight, or absent. In one instance, however, a 1 per cent. cocaine solution seemed to act more quickly and powerfully than a similar solution of tropacocaine. In seven experiments with the same solution the reverse occurred.

These results show that tropacocaine acts more quickly on the rabbit's cornea than cocaine, and that both cause complete anæsthesia. From the average of the experiments it seems that a weaker solution of tropacocaine than of cocaine will produce complete anæsthesia, but this is less certain when the experiments, and not the average, are compared.

Mydriasis was occasionally present, but was less constant than with cocaine.

Ischæmia was not seen. When the solution was made with a $\frac{6}{10}$ per cent. physiological salt solution instead of with distilled water, there was seldom any congestion. With distilled water the hyperæmia usually disappeared within a minute, and no other sign of irritation was noted, unless a few winks, just after the solution was put into the eye, can be so called.

Action on the Heart and Circulation.—In a rabbit that is normal, except for the necessary connection between the carotid artery and recording apparatus, repeated small doses of tropacocaine at first increase the pulse-rate, but there is usually no considerable temporary rise in blood pressure, like that usually seen after cocaine. Almost at the same time the recoil elements of the pulse excursions grow more accentuated, and stand at a lower level, thus showing a diminished tonus of the peripheral vessels; and a very slight but steady fall in the primary blood-pressure curve begins. A little later, secondary curves appear, which are synchronous with the respiration, and show that the central vasomotor function has not been lost.

Quite a rapid fall in tension and pulse-rate precedes the maximum

of toxic action, and, though the pulse excursions are at first high, they later become smaller and, after respiration stops, the curve is exactly like one during asphyxia, the heart beating for some seconds after all respiratory movement has ceased.

Intravenous injection (jugular) more or less completely paralyzes the motor ganglia in the heart, and quickly lowers the tonus of the peripheral vessels.

Action on the Vagi and Sympathetic Nerves of the Heart.—As is to be expected when rabbits alone are used, the results are conflicting. In most instances the vagus seems to be at first more easily stimulated than normal, and this continues nearly, or quite, until death; sometimes, however, there is apparently a diminution in transmitting power, followed by a return to the normal; and in a few cases there seems to be a period of complete paralysis. The practical point, however, is that after section of both vagi, and also when the endings have been paralyzed with atropine, no appreciable change in the pulse curve can be detected. After section of both cardiac sympathetics the pulse curves were not altered.

Action on the Respiration.—After repeated small subcutaneous injections the respiration is at first somewhat more rapid and irregular; during the convulsions extremely irregular and very shallow, and, as coma develops, it becomes slow and superficial, with occasional deep gasps. After large subcutaneous doses there is rapid slowing, then the breathing suddenly becomes extremely rapid and shallow, then slow again, and after a few deep gasps ceases. With intravenous injection the action on the respiration is subordinate to that on the heart; after the general symptoms appear, it is as after subcutaneous injection.

Action on the Temperature.—The temperature generally begins to rise before the convulsions, and its maximum is reached about the time of the maximum of the toxic action of the drug. When recovery follows, the temperature is usually normal before the animal is completely well. The increase in temperature is sometimes 3 or 4 degrees centigrade. With cocaine the increase in temperature is relatively greater, and the return to normal less quick.

Action on Dogs.—The general action of small doses, the local cutaneous action, and also that on the eye, is the same as in the rabbit. No further experiments were made because of the limited amount of the material.

The most important differences between the action of tropacocaine and cocaine on animals are probably the following:—

(1,) Tropacocaine is less than one-half as toxic as cocaine.

(2,) The depressing action both on the cardiac motor ganglia and the heart muscle, especially the latter, is much greater with cocaine.

(3,) Local anæsthesia, both of the eye and skin, is much more quickly complete with tropacocaine, and is possibly of longer duration.

(4,) Slight hyperæmia is occasionally present, but quickly disappears, while with cocaine only ischæmia is seen.

(5,) Mydriasis is usually absent, but always seems to be less than after cocaine.

(6,) Solutions of tropacocaine are moderately antiseptic, and retain their strength for at least two or three months. Cocaine solutions often begin to lose their activity when only three or four days old.

Action on the Human Eye.—A trial was made in the Clinic of Prof. Schweigger, and after several months' use the following conclusions were reached :—

The muriate of tropacocaine causes complete anæsthesia more quickly than a cocaine solution of the same strength. This anæsthesia does not last as long as that produced by cocaine, but a drop or two of the solution can be added from time to time, and complete anæsthesia thus kept up as long as is necessary.

Mydriasis was occasionally seen, but only in slight degree. No ischæmia was present ; on the contrary, in a few cases there was very slight congestion for a few seconds. A few patients spoke of slight smarting, but this disappeared almost immediately and was hardly greater than that from distilled water. Both of these symptoms are much less when the tropacocaine has been dissolved in physiological salt solution—$\frac{6}{10}$ per cent. aqueous solution of pure sodium chloride—instead of distilled water.

No harmful symptoms of any kind were seen, and in most cases tropacocaine seems to be as good—in some cases better—than cocaine. For the extraction of foreign bodies from the eye tropacocaine is preferable to cocaine because of its quicker action, and iridectomy has been performed in less than two minutes after 1 or 2 drops of a 3 per cent. tropacocaine solution had been put upon the eye, and without pain being felt by the patient.

Dr. Silex, first assistant of Prof. Schweigger, has used tropacocaine in his practice and has obtained similar results. He has performed tenotomy in less than half a minute after applying a 3 per cent. tropacocaine solution, and the operation was painless. In all cases a 3 per cent. solution was used, and whether a weaker solution would give as good, or a stronger better, results is yet to be proved.

It is to be hoped that tropacocaine will soon be given a trial in other

than ophthalmic work, and for actual use the synthetically prepared hydrochlorate of tropacocaine is to be recommended.

REFERENCES.—[1] "Pharmazeut. Zeitung," xxxvi., July 4, 1891; [2] "Bericht. deutsch. Chem. Gesellsch.," xxiv., 1891, pp. 2336-2345; Ibid., xxv., 1892, pp. 927-939; [3] "Brit. Med. Jour.," Aug. 20, 1892.

TUMENOL.

This substance is said to be obtained by treating the unsaturated hydro-carbons of mineral oils with sulphuric acid. The result is afterwards treated with a solution of soda, and extracted with ether as long as the latter continues to be coloured. The name is described as a contraction of bitumen and oleum, but the preparation employed is the aqueous solution of the sodium salt of the sulphonic acid, after the sulphon has been extracted by the ether. It is closely allied to ichthyol, the concentrated preparations having a black colour, and it is recommended for trial in similar conditions to those for which ichthyol is useful. Neisser[1] suggests its use in the weeping variety of **Eczema. Prurigo, Ecthyma** and **Burns** of the first and second degree. It has no antiparasitic action like ichthyol, and produces no constitutional effects.

REFERENCE.—[1] "Deutch. med. Woch.," Nov. 5, 1891.

VACCINIUM MYRTILLUS.

Dr. Winternitz[1] writes of his use of huckleberries (bilberries) in treating **Leucoplakia Buccalis**, and other diseases of the mouth, pharyngeal cavity, and tonsils. He treated cases successfully which had existed for weeks and months under other treatment. He uses them chiefly as a gargle, and prefers a concentrated decoction, as follows :—

℞ Tinct. Vaccinii Myrtilli f℥xvij Coque c. aq. font f℥xxxiv	Usq. ad remanent f℥xvij to f℥xviij Express.

Zwenger[2] examined the leaves of vaccinium myrtillus, and stated that quinic (or kinic) acid could be extracted from them. This possesses the ordinary properties of vegetable acids, and undergoes conversion in the system into hippuric acid, and is eliminated by the urine.

REFERENCES.—[1] "Blätter f. klin. Hydrotherapie," Feb., 1892; [2] "Amer. Jour. Phar.," Mar., 1861, p. 128; "Ann. de Chin., July, 1828.

VACCINIUM VITIS IDÆA (Red Bilberry).

This herb is one of those in extensive use among the Russian peasantry as a remedy for **Rheumatism.** It has been investigated by Dr. T. T. Hermann at the suggestion of the Russian Medical Council. A report appears in the "Brit. Med. Jour." (Mar. 19, 1892). He used it in the form of a decoction or infusion of 1 part of the fresh herb, with roots, to 8 parts of the colature—from 2 to 3 tumblerfuls

being given daily—in an obstinate case of **Chronic Articular Rheumatism**, in which all the usual methods of treatment had failed. A striking improvement followed in a few weeks, while in two months the patient (an old man) was practically cured. S. P. Smirnoff,[1] of Cronstadt, next tried the substance in nine patients (sailors and soldiers aged from twenty-two to twenty-seven years), of whom six were suffering from acute, and three from chronic articular rheumatism. In all of them the red bilberry treatment was commenced after all ordinary means—including salicylate of soda, iodide of sodium or pottasium, hot baths, local application of tincture of iodine, turpentine oil, belladonna, mercurial or iodide of potassium ointment, etc.—had proved quite inefficacious. The remedy was used in the form of a decoction, prepared from 1 or 2 ounces of fresh stems, with leaves and roots, in 6 ounces of water, this amount being given daily in divided doses. The duration of the treatment varied from one week to three months. Of the nine patients, seven were cured, while in the remaining two the remedy failed—in one after a week's course, in the other after three months. In all the cases a slight increase of the daily quantity of urine was observed, while in the patients in whom catarrhal diarrhœa was present, the latter quickly ceased under the influence of the decoction. Smirnoff sums up as follows: (1.) The results obtained by him must be regarded as exceedingly favourable; (2.) The red bilberry treatment deserves a further extensive trial; (3.) The method is extremely simple, convenient, harmless, and cheap (in Russia the red bilberry is one of the commonest of plants); (4.) It is advisable to continue the use of the decoction for some time after complete disappearance of all symptoms, since in one case, which had been cured in five weeks, a relapse occurred three and a-half months later; (5.) It is useful to combine the internal treatment with a local application of anodynes and counter-irritants. The decoction forms a cinnamon-brown somewhat turbid fluid, with a slightly bitter and astringent taste, and a neutral reaction. As the author's analysis has shown, the decoction contains vaccinine, tannic acid, extractive, proteid, and mucoid substances, etc. Vaccinine (discovered by Claassen in 1865) is a glucoside occurring in the form of white minute acicular crystals, which are easily soluble in water, but much less so in ether, and almost insoluble in alcohol. Contrary to Maisch's assertions, the glucoside is not identical with arbutin, for the latter is soluble in alcohol, and gives a green reaction with perchloride of iron; while vaccinine, when treated with the salt, assumes a cherry-red colour.

REFERENCE.—"Meditzinskia Pribavlenia K Morskomu Sborniku," Dec., 1891, p. 129.

Part II.—NEW TREATMENT.

A Dictionary of New Treatment in Medicine and Surgery, 1893.

ABDOMINAL INJURIES. *A. W. Mayo Robson, F.R.C.S.*

For all abdominal injuries with suspicion of visceral rupture, whether with external wound, as in stab and gunshot injuries, or without, as in concussion of the abdomen, the opium and do-nothing treatment is practically a thing of the past, and the literature of last year shows that more and more success attends exploratory laparotomy and direct treatment of the injured viscera.

American surgeons for obvious reasons have the greatest experience in these wounds, although British surgery is not without its triumphs in similar cases.

In the performance of operation in abdominal injuries, it is well to bear in mind that time is a very important element in securing success, and, therefore, the abdomen should be shaved and asepticised, and all instruments and appliances placed ready before the anæsthetic is administered. If hæmorrhage is going on, the first aim must be to check it, and then to proceed to suture wounded viscera, or repair other lesions.

Evisceration should be prevented if possible, and all needless handling of the bowel should be avoided; but if the bowels have to be turned out of the abdominal cavity, they must be kept warm and aseptic

Washing out the peritoneal cavity, and drainage, must be employed if the peritoneum have become soiled by escape of visceral contents, or if there have been much hæmorrhage.

Operation should be performed at the earliest possible moment after injury, as if peritonitis have set in the prognosis is necessarily much more grave.

Manteuffel[10] reports a case of stab wound of the abdomen, in which the gastric artery and vein were injured. Laparotomy with ligature of the divided vessels saved the life of the patient.

Berger[1] reports a case of pistol-shot wound of the stomach recovering without operation.

He concludes that gunshot wounds of the stomach and large intestine are much less grave than wounds of the small intestine. He believes that in large wounds penetrating the abdomen, if the surgeon sees the case he should operate at once. If he does not see the patient for four or five hours after the injury, his conduct should be based upon the condition. If there are no symptoms, no operation should be undertaken, as spontaneous cure will probably occur. If there is effusion of blood, or signs of commencing peritonitis, immediate operation is indicated.

Dr. Poroskhin[7] also reports a case of gunshot injury of the stomach successfully treated on expectant principles.

Senn's hydrogen test for the determination of wounds in the intestines does not seem to grow in favour, the objection to its employment being: (*a*,) The fear of the gas forcing fæcal material out of the intestinal wounds, and thus soiling the peritoneum; (*b*,) The great distension of the gastro-intestinal canal with gas; and (*c*,) The fear of an explosion when the flame test is applied to the escaping gas.

That the last mentioned danger is not imaginary has been proved by Dr. Dawbarn,[4] who on two occasions had an explosion in the abdomen of the cadaver, when the issuing jet of gas was ignited.

Intra-peritoneal Rupture of the Bladder.— Prof. P. Edward Rose,[9] of Berlin, is so fortunate as to add to the few cases in which success has followed abdominal section in intra-peritoneal rupture of the urinary bladder. This case is the first in which the open treatment of both vesical and abdominal wounds has been successful.

The patient was a boy of seven years, who was said to have been run over by horses and a heavy wagon. Shortly after the accident he complained of severe pain in the abdomen, and was able to urinate only by drops, the water being bloody. In a few hours nausea and vomiting set in, this continuing and being accompanied by unyielding constipation. Two days after the accident he was admitted to the hospital. Temperature, sub-normal; pulse, 130; mind not wholly clear. Abdomen uniformly distended and sensitive. Dulness in the right lumbar region, these parts being deeply coloured by extravasated blood; a small œdematous area just above the pubes. Reden's peritoneal catheter withdrew about four ounces of bloody urine. Abdominal section from umbilicus to pubes was performed. On opening the peritoneum about a pint of bloody fluid welled out of the abdomen. The bladder was closely contracted, and presented a rent three quarters of an inch wide at its anterior and upper surface. This rent was not sutured. The space about it was thoroughly washed, a large drain placed in the abdomen on either side, packed about

with iodoform gauze. A catheter was introduced into the bladder and left in place.

The urine was passed for the first time by the natural way on the thirteenth day. The space above and about the bladder gradually filled and contracted, and on the fifty-sixth day the abdominal wound was closed. Some weeks later, calculi formed in bladder and were successfully removed.

REFERENCES.—[1] H. C. Dalton, "Annals of Surgery," Dec., 1891 ; [2] A. C. L. Ramsay, Ibid., Oct., 1891 ; [3] Berger, "Therap. Gaz.," Feb. 15, 1892 ; [4] Dawbarn, "New York Med. Jour.," March 12, 1892 ; [5] "Lancet," Aug. 20, 1892, p. 437 ; [6] Kelynack, "Med. Chron.," July, 1892 ; [7] Poroskhin, "Lancet," July 23, 1892, p. 215 ; [8] Page, Abdominal section in ruptured viscera, "Lancet," p. 692, Mar 23, 1892 ; [9] P. E. Rose, Intra-peritoneal rupture of the bladder, "Annals of Surgery," April, 1892 ; [10] Z. von. Manteuffel, Wound of gastric artery, "Brit. Med. Jour.," May 7, 1892 ; [11] Schlange, Rupture of urinary bladder, "Annals of Surgery," Sept., 1892.

ABDOMINAL SURGERY. *A. W. Mayo Robson, F.R.C.S.*

The great importance of abdominal surgery, and the multitude of modifications in abdominal operations, render it impossible to consider the subject satisfactorily under one heading. The progress in each branch is therefore dealt with separately under the headings : "Abdominal Injuries," "Appendicitis," "Ascites," "Fistula (Fæcal)," "Gall Bladder (Surgery of)," "Liver," "Stomach," "Intestine" and "Pancreas," "Hernia," "Peritonitis," "Retroperitoneal Tumours" and "Ureteral Surgery."

During the past year, not only has the perfecting of details continued, but real progress has to be reported in some branches, especially in hepatic, intestinal and stomach surgery. In the closure of abdominal incisions too much attention cannot be paid to the best means of obtaining sound healing, as the yielding of the scar with the consequent hernia are great sources of distress and danger to the patient. Not only firmness of the scar is to be aimed at, but, if possible, avoidance of adhesions between the cicatrix and subjacent viscera. To obtain the latter, accurate apposition of peritoneal surfaces is desirable. For the former, two methods are in vogue : in one, all the layers of the abdominal wall are transfixed *en masse* ; in the other, each layer is sutured separately. I believe that either of these methods will give a firm cicatrix, but as the latter involves more time in its performance, it is perhaps better employed in those operations which have been accomplished in a short time.

In operations such as gastrostomy and colotomy, where a viscus has to be permanently fixed to the wound in the abdominal wall, it is

better to unite it to skin only, and not, as has been so recently recommended, to fix it to the parietal peritoneum as well as the skin. Where a temporary drainage of a hollow viscus has to be effected, as in cholecystotomy, it is better to stitch the viscus to the parietal peritoneum and aponeurotic layer, and not to the skin; but where a pathological cavity such as an abscess, is drained, with the object of securing its obliteration, its wall should be stitched to the skin so as to prevent premature closure.[1]

Dr. Fowler[2] has invented what he termed the crossed suture for securing more accurate apposition in abdominal wounds. It consists essentially of a suture which separately unites the different layers of the wall of the wound, and which is crossed over each layer in turn as it progresses from below upwards, *i.e.*, from the peritoneum to the skin.

Dr. Howard A. Kelly[3] has invented what he terms an ideal dressing, which consists of a paste made of equal parts of washed ether and absolute alcohol, with a little bichloride of mercury, enough to make the solution 1 in 16,000. Into this solution Anthony's snowy cotton is added in small pieces, until the mixture attains a syrupy consistence. After closure of the incision, the skin, the line of the wound, and the sutures are dried, and two layers of sterilized gauze, large enough to project three inches beyond the incision on all sides, are laid on the skin. This is saturated with the above mixture, which hardens rapidly, and which is further dusted over with 1 part of iodoform to 7 of boracic acid. The wound thus sealed may be left untouched for a week or more, when the dressing can be softened with water, or with ether, and the gauze lifted off. I have employed this dressing and found it answer very well.

It is worth bearing in mind that laparotomy may, if needful, be performed under cocaine, as I have proved by personal experience. A case of Dr. Lamphear's[4] is reported, in which cocaine was used with very great advantage in a patient almost *in extremis*.

It is interesting to note that, in a case reported by Dr. Pilate,[5] of Orleans, an antiseptic compress was left in the abdomen, and was afterwards passed in a mass of hard fæces, the patient recovering. But in another case related by Quenu, the patient died, and the compress was found rolled up in a coil of intestine. In the same way Mons. Terrillon observed a case, where pressure forceps were voided close to the umbilicus, the patient recovering after eight months.

Lucas Championniere[6] reports five cases in which it was found necessary to perform laparotomy for the relief of internal strangulation following operation on the viscera of the abdomen. In the first of these cases the symptoms of obstruction were presented on the

eighth day after ovariotomy, and were found to be caused by old adhesions of the intestine to a mass of omentum. The primary operation in three cases was for the radical cure of hernia, and in the fifth case for strangulated hernia. The post-operative obstruction was due in three instances to adhesions, and in one to the pressure of a large intraperitoneal effusion of blood. All these patients made good recoveries after the second operation. Mention is made of a case of fatal obstruction after an operation for the radical cure of hernia, in which, after death, a loop of intestine was found to have been strangulated by a peritoneal band. In cases of this kind it is often difficult to determine whether the patient be suffering from actual strangulation or from simple obstruction of the intestine. If it be clear that the bad symptoms following operation are due to mere obstruction, purgatives, the author holds, ought to be administered. It is not a rare occurrence for laparotomy to be followed by intestinal paralysis with fæcal retention, the paralysis giving rise also to symptoms of occlusion with stercoraceous vomiting. With the view of preventing this bad result, the author makes it a general rule to administer a purgative two or three hours after the performance of laparotomy, thus following, and indeed, carrying out to a further extent, the practice advocated by Lawson Tait. Since he has adopted this line of treatment he has not observed the rise in temperature and the symptoms of gastric disturbance which so frequently result when the patient is subjected to the influence of opium.

Klotz[8] does not look on ileus after abdominal section as a septic affection, but as a form of intestinal obstruction, due to fixation of the bowel by blood clot. He treats these cases by seidlitz powders and enemata on the second day after operation. When this fails he washes out the stomach under high pressure, and inflates the rectum with air, and this failing, he gives a large dose of castor oil—as much as 1½ ounces—which, he says, is always retained and frees the bowels from adhesions.

Shanta[9] speaks highly of Trendelenburg's position in the performance of pelvic operations within the peritoneum, but he considers it important to exactly replace the intestines, as volvulus has occurred after this method of operating.

Mr. Stephen Paget[7] reported at the London Clinical Society, an example of acute parotitis following abdominal section for intestinal obstruction. He stated that he had collected upwards of a hundred instances of acute inflammation of the parotid occurring after injury or disease, or temporary derangement of the abdominal or pelvic organs due to reflex nervous action, and not to pyæmia.

REFERENCES.—[1]Principles in closure of abdominal incisions, "Lancet," July 2, 1892, p. 33; [2]The crossed suture, by G. R. Fowler, "Annals of Surgery," May, 1892; [3]Ideal dressing, by Dr. Kelley, "American Jour. of Obstetrics," Dec. 1891; [4]Laparotomy under cocaine, by Dr. Lamphear, "Annals of Surgery," July, 1892; [5]Dr. Pilate, "Brit. Med. Jour." Supplement, May 28, 1892; [6]Treatment of post-operative intestinal obstruction, by Lucas-Championnière, "Revue de Chir.," March, 1892; [7]Parotitis after abdominal section, by Mr. Stephen Paget, "Lancet," April 16, 1892; [8]Klotz, Obstruction after abdominal section, "Brit. Med. Jour.," Sept. 3, 1892; [9]Shanta, Trendelenburg's position for laparotomy, "Brit. Med. Jour.," Sept. 3, 1892.

ABORTION.

Wm. J. Smyly, M.D., F.R.C.P.
John H. Glenn, M.D., B.Ch.

The success obtained by many Italian physicians in the arrest of abortion by the use of **Asafœtida** is alluded to by Turazza, who records that out of thirty seven recent cases, in thirty-three abortion was prevented by the drug. He follows the prescription of P. Negri, of Venice: asafœtida 6 grammes, to be made into sixty pills. Directly pregnancy is suspected, one of the pills (about 1½ gr.) should be taken twice a day; the dose is then slowly increased to 10 pills daily, and then gradually reduced till confinement. Turazza adds short notes of four successful cases. In two there had been three and five abortions respectively, without any objective local cause. In the third, the patient had aborted five times; after the last miscarriage perimetritis occurred, and lasted two months; there was also catarrhal endometritis. Ten months after the miscarriage she became pregnant again. Asafœtida was promptly administered, and the patient was delivered at term. In the fourth case, no mention is made of previous miscarriages; abortion at the sixth month was threatening when the gum resin was given. The danger passed over, and delivery occurred at term.

REFERENCES.—"Brit. Med. Jour.," April 2, 1892; "Centralbl. f. Gynäk.," No. 9, 1892.

ACNE.

Synopsis.—(Vol. 1892, p. 89) For removal of acne punctata **Ammonia Soap** (Liq. Ammon ♏10-30, Ether, ʒj; Soft Soap, ʒj; keep air tight). Foment with hot water, and apply the soap firmly with the ball of the thumb, and quickly wash it off; assist by attending to lung hygiene, careful dieting, total abstinence from alcohol, ices or cold beverages; use of **Hot, Electric or Turkish Baths** (sea bath rarely); **Sharp Outdoor Exercise, Wearing Soft Woollen Clothing. Avoidance of Excitement.** Relief of genital excitement by frequent use of **Cold Sound** in males, and **Hot Vaginal Douche** in females. **Kaposi's Lotion**: Washed and precipitated Sulphur, powdered Glycerine, Carbonate of Potassium, Cherry Laurel Water, Alcohol, of each 2½ drachms. Apply at night, replacing by

Zinc Ointment or Glycerine by day. Isaac recommends Resorcin ½ to 1 drachm, Oxide of Zinc and Powdered Starch each 1 drachm, Vaseline 2 drachms. Apply day and night, or if desired, remove with Olive Oil and Soap, and use Absorbent Powder by day.

ACNE ROSACEA.

Synopsis.—(Vol. 1892, p. 90.) Besnier recommends Correction of Digestive or Uterine Disturbance, Severe Diet, Exclusion of Alcohol, Perfect Action of Bowels, stimulating the circulation by derivatives to lower extremities by Warm and Sulphur Baths, Douches and Frictions. In irritative forms he uses local anodynes first, then stimulants and resolvents, and if these fail, scarification. As resolvents Kaposi advises Emplast. Hydrarg. for nodules, Sulphur Pastes: ℞ Sulph. Præcip. et. lav., Glycerine pur., Pot. Bicarb. Aq. Laur. Cerasi. Spirit (Montpellier) āā 10 parts, at night, or Tinc. Iodi or Iodised Glycerine applied 8 or 12 times daily for three or four days, and covered with gutta percha tissue, using by day soothing applications. Unna recommends Ichthyol Varnish: ℞ Ichthyol, 40·0; Starch, 40·0; Sol. of Albumen, 1 to 1½; Water, to 100. Moisten the starch with water, thoroughly rub in the ichthyol, and finally add the albumen solution. ℞ Ichthyol, 25·0; Carbolic Acid, 2·5; Starch, 50·0; Water, 22·5. Dissolve Ichthyol and Carbolic Acid in the water with heat, and slowly rub in an equal amount of starch.

ACROMEGALY. *Græme M. Hammond, M.D., New York.*

F. Gordon Brown at a meeting of the Hunterian Society showed a patient, a clergyman, aged forty, who was suffering from well-marked acromegaly. He had had rheumatic fever at the age of nine, and a mitral diastolic murmur was audible for some years afterwards. The characteristic symptoms were well-marked in the face, hands, and feet. The patient was improving under the internal administration of **Antipyrin** and **Arsenic.**

REFERENCE.—"Journ. Nerv. and Ment. Dis.," Sept. 1892.

ACTINOMYCOSIS. *F. S. Eve, F.R.C.S.*

A. Raffer[1] has observed four cases of actinomycosis in the human subject, all of which were cured. The first, a case of abdominal actinomycosis, was treated by scraping. The others were examples respectively of actinomycosis of the jaw, parotid, neck, and occiput. The treatment to be recommended when the infiltration is diffuse, without evident capsule, is to inject antiseptics into its neighbourhood, using an ordinary hypodermic syringe; injections should be made into various parts of the swelling, using at each sitting from 1 to 3 grammes of a 5 per cent. solution of **Carbolic Acid** in **Glycerine.** The injections may be repeated in from two to five days. If there be sinuses, pledgets of cotton wool soaked in the antiseptic should be introduced into them. Although carbolic acid was chiefly relied on, Raffer on one occasion used a 1 per cent. solution of **Methyl-violet** as well, and apparently with good effect. While giving prominence to this purely antiseptic treatment, he suggests the advisability of combining with it in some cases the use of the knife or cutting spoon.

Cases of the disease have recently been recorded by Dr. W. H. Ransom[2] in which the vermiform appendix was affected causing perityphilitis, by Dr. W. B. Ransom[2] in which the intestinal and urinary tracts were the seat of disease, and one of the face and neck by Mr. A. R. Anderson[2].

REFERENCES.—[1] "Rif. Med.," Feb. 4, 1892; "British Med. Journ.," June 4, 1892; [2] "Practitioner," Jan., 1892.

Synopsis.—(Vol. 1892, p. 93) Successfully treated in the cheek by **Gautier's Process**, inserting platinum needles into the nodules, and injecting, once a minute, a few drops of **Potassium Iodide** solution, 1 in 10; the needles are connected with the poles of a battery, and the solution is decomposed by a current of 50 milliampères. Chloroform is used, and the sittings are repeated for twenty days, then eight days' interval is allowed. **Dissection** and **Scraping** have also proved successful.

ACTINOMYCOSIS CUTIS. *T. Colcott Fox, M.B.*

Though a considerable number of cases have been seen at certain centres, such as Vienna, this disease but rarely attacks the skin of man in Great Britain. The skin may be attacked primarily or in conjunction with deeper seated parts. The region of the face and jaw is the most frequent site affected in Europe, often through the channel of a carious tooth. The clinical appearances are not very characteristic. There is a chronic granulomatous infiltration of the skin forming a reddened, and usually a nodulated, patch. In man, pus formation tends to occur with the discharge of the characteristic bodies. Majocchi distinguishes an anthracoid and an ulcerative fungating form. The related glands are not involved.

A most important addition to our knowledge has been made by the confirmation of Vandyke Carter's suspicion that the so-called mycetoma or madura foot of India and Egypt is a form of actinomycosis. Kanthack was the first to announce this discovery. Müller met with cases in the finger.

REFERENCES.—Legrain, "Ann. de Derm. et de Syph.," Oct. 1891; Perroncito, Crookshank and others, Internat. Hygien. Cong., 1891; Müller, "Beiträge zur. klin. Chir.," Bd. iii. Hf. 3, p. 355, 1888; "Lancet," July 9, 1892; Majocchi, "Rif. Med.," June 17, 1892; Kanthack, Path. Soc. Lond., also "Lancet," July 16, 1892; and "Journ. Path. and Bact.," No. 2, 1892; Hewlett, "Lancet," July 2, 1892; Surveyor, "Brit. Med. Journ.," Sept. 10, 1892.

AERO-URETHROSCOPY. *E. Hurry Fenwick, F.R.C.S.*

Electric Light Examination of the Inflated Urethra.—In the "Medical Annual" of 1889 (p. 266), I described the then new electric urethroscope of Leiter, after having had the instrument in use for a year, and proved it to be reliable, practical, and useful. Being dissatisfied, however, with the small size of the field, I adopted von

Antal's manœuvre of inflating the penile urethra, and obtained by this method a long flat wall instead of a small circle of lax mucous membrane crowded into the end of a small cannula. In 1890, Dr. Franz Hewel, junr., of New York ("Medical Annual," 1891, p. 477), apparently without knowing of Antal's work on the subject, had adopted a similar expedient. As I have long given up the older form of cannula in favour of the inflating urethroscope, I append a woodcut

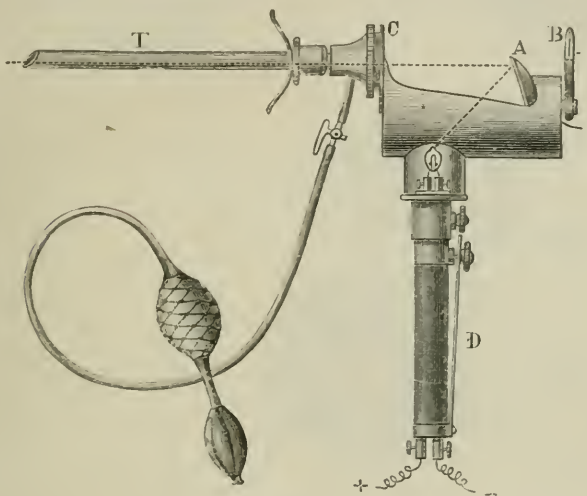

Fig. 1.

(*Fig.* 1) of the instrument called by Antal the aero-urethroscope, being certain of the enormous advantage afforded by this modification. It has, however, a drawback, to which I shall allude presently. *Fig.* 1 needs no detailed description. The nose piece C is closed with an obliquely set glass diaphragm, so that air, forced into the cannula T by means of the indiarubber ball, cannot but distend the penile urethra up to the commencement of the deep urethra (the compressor urethræ muscle). The cup at the proximal end of the cannula (*Fig.* 2) receives the convex glans penis, and effectually prevents the in-driven air

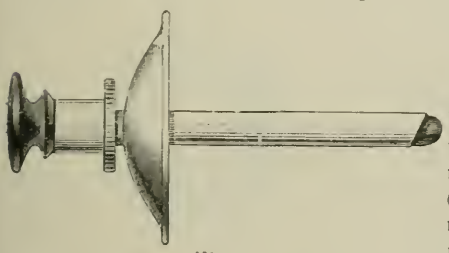

Fig. 2.

escaping from the urethra, unless, of course, a great pressure is exerted. With the exceptions of the glass cup, the pressure balls, tap, and the glass diaphragm, the instrument is the same as that described in the "Medical Annual," 1889, as Leiter's urethroscope. It has one disadvantage. The glass diaphragm prevents any manipulation, such as swabbing, dusting, curetting, cutting, or cauterizing of the urethra under the direct control of the light, all of which is possible with the open or non-fenestrated nose piece. This difficulty is easily overcome. Leiter, of Vienna, has made me a very handy instrument (*Fig.* 3), partly at my suggestion and partly at Mr. Schall's, in which the diaphragm is only fixed by a bayonet catch. Hence, when the granular patch, ulcer, or tumour, has been discovered by means of inflation, the end of the cannula is held firmly in position, the diaphragm is removed, and the operation proceeds through the open tube, under the direct control of the electric light. My new instrument is also fitted with various magnifying lenses, so that by turning the branched nose-piece, any lens, which may be required to magnify the field at a distance corresponding to the length of any particular cannula, can be twisted into position.

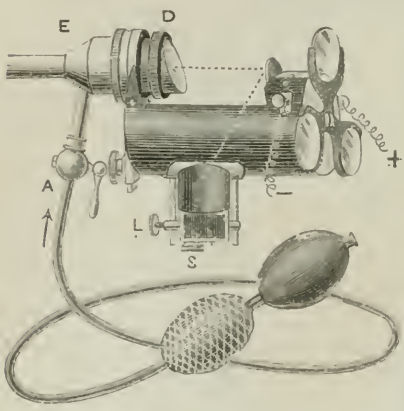

Fig. 3.

The practical Utility of the Instrument.—By the employment of this modification, the examination of the urethra is made much easier, and less skill and experience is necessary to detect changes in the mucous membrane. That knowledge which formerly meant a considerable outlay of time, patience and material, can now be readily and quickly acquired. On inflating the urethra, a long tube of mucous membrane appears, and the cannula can be passed along it without pain, because no friction takes place between the stretched wall and the open end of the tube. As Dr. Hewel has remarked, "The openings of the lacunæ, a drop of mucus or gleety discharge, the innumerable blood vessels, granulations, ulcerations, false passages, strictures, may all be recognized, and their situations noted."

As no advantage can be gained by the inflation of the membranous

FIG A

FIG B

FIG C

FIG D

FIG E

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and prostatic urethræ, I use the open nose piece for these sections of the canal, and employ curved tubes, with posteriorly placed open windows. As in a large majority of cases the deep urethra is affected in chronic gleet, these tubes are a necessity. The orifices of the prostatic sinus, the sinus pocularis, and the verumontanum, are easily and plainly made visible by their means. One or two cautions only are necessary as regards the working of the aero-urethroscope.

Dangers.—(a) It is, in my opinion, unwise to use air pressure after a meatotomy, an internal urethrotomy, or in dealing with an urethra in which a false passage has been *recently* made. Air will freely enter the circumurethral tissues under these conditions, and will produce surgical emphysema of the penis. The air will spread exactly like an ordinary extravasation of urine. I examined with inflation a patient who had had profuse bleeding from attempts at catheterism of a stricture some few hours before applying to me for relief. I was able to find the opening of the false passage with ease. It lay just below the pin-point orifice of the strictured part of the urethra, and it appeared as a bloody-edged, ragged, slit. But the patient called out almost immediately that something was running down the inside of his thighs, and I then became aware that air was passing freely through the opening of the false passage, and escaping into the tissues of the perineum. There was no doubt but that the false passage was very extensive. No ill result ensued, but it is easily conceivable that damage of a grave description can be inflicted by unfiltered air passing over an inflamed surface, and opening up extensive cellular planes in the thighs, perineum and pelvis.

(b) I believe also, that it is best not to employ air pressure in acute inflammation of the urethra, for the air will only force the pus lower into the canal, and if the constrictor urethræ be weak, as sometimes happens, the inflammatory products will be blown into the deep urethra, and into the prostatic canal. I only use this instrument after the acute stage has passed, and take care to have the urine passed just before the introduction of the cannula, in order to examine and operate upon a cleansed surface.

Fallacies.—The inflation of the urethra can cause certain fallacies, which merit a passing notice :—

(1) *Natural Fibrous encircling Rings.*—Here and there along the normal urethra are incomplete or complete rings of fibrous tissue which surround the canal and lie close under the epithelial layer. When the lax mucous membrane is stretched out by means of air pressure, these rings stand out taut and conspicuous, the mucous membrane being bulged on either side of the thin fibrous band. As the mucous

membrane is rendered bloodless by the pressure, these bands are of a brilliant white, and they may be mistaken by a novice for ringed stricture. In fact, I cannot help thinking that specialists may mistake these for large calibred strictures by the slight obstruction which they afford to the return passage of very large, bullet-ended, stricture searchers.

(2) *The Peno-scrotal Angle or Fold.*—The penis is braced up by means of the suspensory ligament, and thus forms in its flaccid condition an acute bend at the peno-scrotal angle. If the urethroscopist looks at this bend without pulling the penis out horizontally, and without making in this way the penile portion level with the deep part of the urethra, this bend will appear as a fold, and will look exactly like a thick and tumid stricture of the canal (*Plate III, Fig. L*).

(3) *Network Fibres.*—In the normal bulbous urethra, the floor is covered with sparsely arranged interlacing bands of fibrous tissue. On extreme air distension, these white prominent bundles have the exact appearance of the commencements of stricture (*Plate I, Fig. A*). They disappear at once on slightly relaxing the air pressure, whilst true incipient thickenings of the surface remain white and unpliably stiff (*Plate III, Fig. M*).

(4) *Paling of the surface from pressure.*—In the urethra, as in the bladder, any overstretching of the surface causes the mucous membrane to become unnaturally pale. By watching for a change of colour, one can very rapidly fix upon any spot which has not been rendered pale by pressure, for, when the surface is diseased and congested, its blood vessels are not readily emptied, and even if they are depleted the surrounding stain of inflammatory exudation still remains visible. One is accustomed to consider those patches which do not become pale on pressure, as being unduly congested. In the majority of cases this is perfectly correct, but patches are met with, the relics of a subacute attack, where the injection is very slight, and in these the blood is readily driven out. They may be overlooked, therefore, if the urethroscopist is guided solely by colour. It is wiser, then, after a superficial search, to relax the intra-urethral air pressure, by permitting some of it to escape by the side of the mouth of the cannula. The mucous membrane will thereupon assume its normal tint, and the subacute patches will stand out in contrast redder and more injected than the rest of the surface.

The clinical value of the Aero-urethroscope.—The colour of the urethral mucous membrane varies from that seen inside the lip (buccal cavity) to an intense red, according to the degree of congestion (*Plates I* and *II, Figs. C, F*). In most urethræ the main vessels are seen running

Fig F.

Fig G

Fig H.

Fig I

Fig K

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longitudinally, and between these trunks are the fine intercommunicating net-works of the smaller vessels. In some, these trunks are larger and more prominent than in others, and in these former the surface is "sweaty," that is, there is an abundant supply of urethral moisture, a condition often met with in prolonged gleet. In health the surface is glistening, and the reflection from this natural mirror economizes the light by increasing it. Where the epithelium has become changed or denuded, the light is absorbed, and the observer at once notices the dull dark aspect of the surface. This lack-lustre appearance is in itself a hint which no urethroscopist can neglect or overlook.

The Tonicity of the Constrictor Urethræ.—I have been in the habit of using air pressure to roughly estimate the "tonicity" of the constrictor urethræ, and I am more and more convinced of the utility and importance of this step. The long cannula is passed down the penile urethra until its end is situated about five inches from the meatus. On air being permitted to enter, the opening of the membranous urethra will be seen to be gradually thrust backwards. The mucous membrane at this point is gathered up into innumerable folds by means of the constricting action of the muscle which surrounds this part of the urethra (*Plate II, Fig. F*). As the pressure increases the junction of the bulbo-membranous urethra becomes funnel-shaped, and the apex—the opening—which is tightly closed by the resentful spasm of the constrictor in its attempt to exclude the air, now resembles a tightly compressed mouth. In normal urethræ the pressure of a full air bag will cause this orifice to open momentarily and to gulp down a mouthful of air, which gurgles audibly into the bladder, the patient usually exclaiming at the same time, not on account of pain, but from the discomfort and peculiar sensation such an introduction entails. In those with a tendency to so-called "spasmodic stricture," not a breath of air will pass the barrier. In a small majority of healthy men, and in those in whom the muscular layer has been apparently weakened by gonorrhœal inflammation of the superjacent surface, the air passes into the bladder in long gushes. In these latter, I never order fluid injections, for in such patients inflammatory complications of the neck of the bladder and testicle readily arise with such treatment.

In certain cases the patient complains of "water hanging in the tube" after micturition, and is greatly annoyed by the escape of half a drachm of urine dribbling out into the trousers a few minutes after urination has been completed. In these cases the tonicity of the compressor urethræ is never perfect. Air inflation shows it to be either intensely spastic, or incapacitated by inflammatory infiltration.

The former condition points to superficial erosion of the surface of the deep urethra, which needs special treatment. The latter requires massage and faradic currents.

Gland-guides to the grade of Urethritis.—In the penile urethra the opening of the urethral glands are often a useful guide to the stage and character of the urethritis. Even in the healthy "virgin" urethra the openings of glands are readily seen on inflation of the canal as red depressed specks along the roof. After the surface has become inflamed, their appearance changes, and the differences in the aspect, roughly speaking, are of three types. On the subsidence of the gonorrhœal or urethral inflammation, the orifices of the glands will be seen to be wider than normal and to be surrounded by a delicate rose-coloured blush (*Plate I, Fig. B*). As the gleet becomes chronic the pinkish edge becomes purple and the opening is still wider (*Plate I, Fig. D*). In a small minority (6 per cent. [?]) of old and obstinate cases of gleet, the glands will be seen to be distended, turgid with secretion, and white in colour, and they now appear like the swollen solitary glands in the small intestine (*Plate I, Fig. E*). In the most aggravated form of urethral gleet they resemble slightly raised opaque pin headed points, placed in double rows along the roof like so many buttons. The projection is apparently due to the hypertrophy of the surrounding tissue. I know of no class of gleet more obstinate or more unsatisfactory to deal with than that in which these peri-glandular swellings are visible. The thin gleety discharge, which is so intractable, apparently exudes from these glands. In some who have "bursts" of pus for a day or two with intervening weeks of urethral health, it is often these glands which are the peccant factors, for becoming over distended with their secretion, they burst and give rise to a slight and transient circumjacent urethritis.

Congested Patches.—These appear, I believe, most often at the peno-scrotal bend, and not only induce gleet, but give rise to many uneasy sensations, such as tickling, fly or insect crawling, and burning about this region of the canal. They are best treated by gently swabbing the surface with a weak solution of nitrate of silver, applied through a tube passed down to this region.

Granular Patches appear at any part of the urethra, their favourite position being near the meatus. They are readily recognized by their velvety uneven papillary surface. The eye often catches the glint of the light (*Plate II, Fig. J*), which is reflected from the tips of the papillæ. They are able to induce varied reflex neuroses as well as a distressing and obstinate gleet. The larger patches heal by gradual cicatrization and production of stricture. Careful application of iodine solution, or

nitrate of silver, 2 to 5 grains to the ounce is necessary, under control of the light, so that only that part which is diseased is cauterized, and then only superficially and slightly.

Erosions, Ulcerations.—Superficial erosions are not uncommon, being especially found near the deep urethra, where they induce much spasmodic action of the constrictor urethræ. I cannot say that true ulcerations are often seen unless it be just within the meatus, or as the result of instrumental roughness. Both require stimulation. Primary tubercular ulceration is, I am sure, extremely rare.

Nacreous Patches (*Plate II, Fig. K*) are sometimes met with in the form of splashes of white sodden epithelium. They usually betoken infiltration into the deeper tissues, and indicate the site of future strictures. *Œdematous folds* (*Plate II, Fig. H*) are perhaps best marked at the wrinkles which surround the opening of the deep urethra. I have seen them most pronounced in syphilitic subjects. They usually prove obstinate.

Strictures.—The instrument is of course quite valueless in the general diagnosis and treatment of stricture, but it is helpful in preventing much useless worrying of the urethra by establishing with certainty the existence or absence of stricture of "large calibre." I suspect many strictures are diagnosed which do not really exist, and in many cases of chronic gleet the practitioner jumps to the conclusion that a stricture is present because the gleet is unusually obstinate. This is the outcome of the teaching that "all chronic gleet means stricture"—a false theory. Very often I am asked to examine for gleet due to stricture and find none present, and discover merely an œdematous or acutely inflamed sensitive granular patch, which bleeds on being touched, its circumjacent muscle spasmodically resenting the passage of an instrument (Hilton's law).[1]

It is surprising how often a congenital fold on the floor just within the meatus will keep up an old gleet. These are readily seen, and often, if they are divided, the congestion, or the irritating patch which lies just behind them, disappears, and with it the gleet. An incipient stricture of the urethra is readily seen on distention of the canal, for the mucous membrane is bulged in front and behind it (*Plate III, Figs. M, O*). If it be thin, it can be divided upwards by a harpoon knife, under electric light (*Plate III, Fig. P*). In very large and non-recent false passages, in which a difficulty has arisen in introducing an instrument, I have used the light with great success, passing the whip into the real orifice of the stricture under the control of the eye.

Prostatic Catarrh.—In cases of vesical irritability due to prostatic catarrh, the surface is spongy, mottled and flecked with yellow or

white (*Plate II, Fig. G*), and the caput gallinaginis is not infrequently seen to be red, tumid, and enlarged. It flops into the open end of the cannula, and is easily cauterized. I often use the solid stick, applying it under control of the light to its surface, with a light and single touch. This turns the caput of a dull white, which contrasts sharply with the colour around (*Plate III, Fig. N*). The stick is also used for the sinus openings.

TREATMENT.—In the usual course of practice a large percentage of urethritis and gonorrhœal cases are healed either empirically by means of injections or balsams, or the disease burns itself out despite all that can be done for it. But a certain small proportion of the cases prove intractable; nothing seems to have any controlling effect. In these I am certain that the light is indispensable, and inflation is a necessary adjunct in the examination. Of all the solutions used in pencilling, swabbing, or cauterizing the various inflammatory conditions, **Nitrate of Silver** and **Iodine** are the two most reliable.

It must be remembered, for it is not sufficiently realized by the profession, that very few cases of intractable gleet are confined to the penile urethra. The deeper—the posterior urethra—is also generally affected as well, and needs attention. The disease will not usually be thoroughly eradicated until this—the neglected part of the urethra—is thoroughly and topically treated, and with the same vigour and persistency which is devoted to the management of the anterior or penile portion.

[1] Compare: Hilton, "Rest and Pain," 2nd Edit., p. 248.

ALOPECIA AREATA. *T. Colcott Fox, M.B.*

Chatelain continues to obtain good results from the periodic application of **Iodized Collodion** (1 in 30). An application every four or five days is generally sufficient. If dermatitis is produced the treatment should be suspended. The pellicle usually separates in a few days, but the epilation of hairs by forcible removal is useful. Tison also uses this treatment, and washes the general surface of the head with **Bichloride of Mercury** solution. Morel-Lavallée cleanses the surface, scarifies the patches slightly and superficially, and then applies a layer of pomade. This treatment is repeated every five to eight days.

Bulkley, from a long experience, speaks favourably of the application of **Carbolic Acid** (95 per cent. solution). It is a little painful at first, and it whitens and shrivels the skin, setting up a little inflammation and desquamation. He seldom applies it to more than two or three

FIG L.

FIG M.

FIG N.

FIG O.

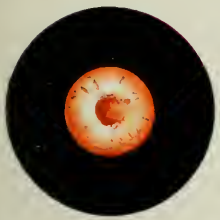

FIG P.

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square inches at a sitting. A second application can be made to a spot in two weeks or more.

Barthelemy has found Moty's method successful, *i.e.*, the injection of 4 drops of a 4 per cent. solution of bichloride of mercury and 2 per cent. of **Cocain** around the periphery of a patch, to be repeated every four days. The number of injections required at each sitting will depend on the size of the patch.

Raymond, on the other hand, does not think that Moty's treatment presents enough advantages to compensate for the inconveniences. He thinks these intradermic injections act rather by revulsion than by direct effect on micro-organisms. He also affirms that injections of simple water redden the patches and make the hair grow. Busquet's local use of **Tincture of Cinnamon** is good, but Raymond prefers his own method, founded on the view that continuous excitation of the skin is required to awaken the vitality of the hair bulb. The scalp should be shaved, when practicable, and thoroughly washed with some antiseptic soap. The general surface of the scalp is protected by a morning rubbing with an application containing hydrarg. bichlor. 0·5 ; tinct. canthar. 25·0 ; bals. fioravante (French codex), 50·0 ; aqua cologniensis, 150·0. The bare patches receive an additional friction with the same solution applied with a stiff brush, and at night are similarly treated with an application containing 2 parts of salicylic acid, 10 of β-naphthol, and 15 of crystallizable acetic acid in 100 of castor oil.

Ohmann-Dumesnil admits a parasitic, a much more frequent neurotic, and a mixed form, and gives some points which he relies on for the distinction. In the parasitic form he uses twice daily a 1 in 750 solution of mercuric chloride, and later a 3 per cent. creolin solution, as a wash for the entire scalp. For the affected areas he orders the application of sapo viridis for about five minutes, then gentle scrubbing, followed by the rubbing in of a small quantity of bichloride of mercury ointment (gr. j to ℥j of lanolin). In neurotic alopecia areata he vesicates with cantharidal collodion, but prefers Bulkley's carbolic treatment.

The most important contribution of the year is the statement by Feulard that pelade increases in France, and that it commits numerous ravages, especially in the army, and particularly in the great centres like Paris. The total attacked of the effectives of the army from August 1891 to May 1892, was an average of 3·30 per 1,000. Regular epidemics have broken out in regiments, and the "tondeuse" is widely accused.

REFERENCES.—Tison, "Soc. de Méd. Pratiques," March 17, 1892 ;

Chatelain, "Mal. Cutan.," vol. iii., 1891, p. 605; Bulkley, "Journ. Cut. and Gen. Urin. Dis.," Feb. 1892; Feulard, Internat. Congress of Derm. and Syph., 1892; Raymond, "Ann. de Derm. et de Syph.," July, 1892; Ohmann-Dumesnil, "Lond. Pract.," Sept. 1892.

Synopsis.—(Vol. 1892, p. 97.) Besnier uses ℞ Chloral Hydrate, 5 grammes; Officinal Ether, 25 grammes; Crystallizing Acetic Acid, 1 to 5 grammes. Apply with slight friction. For limited circumscribed patches Chatelain uses **Iodized Collodion** (1 to 30), repeating the application weekly. Mouty injects 5 to 6 drops of a 2 to 500 **Corrosive Sublimate Solution** round each patch.

In recent cases Morrow applies every few days **Chrysarobin** (8 to 10%), with or without **Salicylic Acid** (2 to 5%) in **Traumaticin** or **Lard**; and in extensive cases **Acetic Acid** with equal parts **Chloroform** or **Ether** is applied two or three times weekly, the patient using in the interval ℞ Oil of Eucalyptus, Oil of Turpentine āā ℥ss, Crude Petroleum ℥j, Alcohol ℥j, used with massage for five minutes; and later the oil is replaced by **Sulphur Ointment**, with or without **Resorcin**. Illingworth advises **Biniodide of Mercury** in **Iodide of Sodium** solution.

Carbolic Lotion ℥j to ℥ij, rubbed in with a piece of **Boric Wool** has been advised, and then painting with **Acet. Lyttæ**. If this irritates, **Iodine** is painted on twice a week, and later **Ung. Creasoti** is used each morning.

AMPUTATIONS. *F. S. Eve, F.R.C.S.*

Mr. Charles Traux (Chicago) makes the following practical and, in some respects, original suggestions on the choice of points for amputation of the lower limbs, from the standpoint of securing stumps most favourable for the subsequent use of artificial limbs. The conditions he considers essential to a favourable stump for locomotion are a conical form without sharp corners or protuberances, with cicatrix underneath and preferably at the posterior margin, and length enough to obtain a good bearing in the stump socket.

Where a stump is so formed as necessitates its bearing a portion of the weight of the patient at its end it is usually a source of annoyance, because it not only forms an inferior means of support, but is constantly liable from the slightest causes, to pain, irritation, and ulceration.

In amputations of the femur the value of the stump to the patient increases with its length until a point is reached within three inches of the lower end of the bone. Here, at this point of three inches above the knee-joint, is the point of election, which should be adopted if circumstances are favourable.

In amputations of the tibia the value of the stump also increases with its length, and the same rule should be applied as in the case of the femur, excepting that the point of election should be the juncture of the lower and middle thirds. Here the amount of surface exposed to the lateral pressure of the socket is not of as much importance as in thigh stumps, because the weight of the body is principally carried

by the condyles of the head of the tibia. These afford a firm, unyielding surface which, when once well fitted with a socket, will, if necessary, carry the whole weight of the patient. It is, however, preferable to secure the advantages of a natural, conical-shaped stump by amputating below the calf, and thus increasing the bearing surface, and removing a part of the pressure from the head of the bone. Further, the amount of leverage increases with the length of the stump, so that if the operation be performed at the point indicated, the patient will have better control over the artificial limb than if the operation be at a higher point.

This point of election not only gives to the patient every benefit offered by amputations at or near the ankle, but it enables the instrument maker to display his mechanical ability to the greatest possible advantage.

Following injuries involving the middle and upper thirds of the tibia, many works on surgery advocate the leaving of short tibial stumps, that the patient may be provided with what are known as knee-bearing legs, or those in which the weight is taken on the anterior aspect of the flexed limb. It seems almost unnecessary to present arguments to demonstrate that such limbs would be clumsy appliances at best, owing to the imperfect connection between the natural and artificial portions. Short tibial stumps usually contract to a greater or less extent, and for this reason should be avoided. Traux is of opinion that an amputation should not be performed within three inches of the joint. In cases where only from three to four inches of the tibia can be preserved, and there is no danger from inflammation in the joint, it would seem better to excise the remaining portion of the fibula. Its presence is of no benefit to the patient, while its removal facilitates the forming of a more conical stump, and insures a greater degree of firmness therein. Several cases have come to his knowledge, where the pressure of an artificial limb socket on the remaining fragment of fibula has proved a constant source of pain and discomfort, and one or two cases of ulceration were due to this cause.

The fundamental principle that forms the basis for the new theory is the fact that the successful operation of a limb, whether natural or artificial, depends largely on the action of its joints. Therefore, unless the surgeon amputates at points that not only leave the natural joint intact, but provide below it sufficient leverage to swing the substituted portion, he will interpose obstacles in the way of the instrument maker that will prevent the construction of the best form of appliance.

The author proceeds as follows :—

"To amputate through the knee or ankle-joint is to assume the position of the dog in the manger, for the remaining structures occupying the half of the joint are of no use to either the surgeon or patient, but take up room that should be used for joint mechanism. The natural half of a joint remaining after a knee or ankle disarticulation is of no more use to the patient than the odd half of a pair of shears, for only in a limited number of cases can much, if any, weight be borne by the ends of the bones.

"It required only a brief experience in the construction of artificial limbs to satisfactorily demonstrate to my mind that patients in large numbers are being crippled annually by tarsal and tibio-tarsal amputations, but it was with considerable hesitancy, even after an extensive investigation, that I first dared to advise the entire abandonment of all operations of this class.

"Patients who have suffered amputations of this class, after being provided with artificial substitutes, rarely walk as well as where the amputation has been performed through the tibia.

"Owing to the unsatisfactory service resulting from the use of artificial arms and hands, the surgeon is not warranted in adopting radical methods in treating injuries or disease in the upper extremities. On the contrary, he should exhaust the last resources of conservative surgery and save all of the parts possible."

REFERENCES.—"Journ. Amer. Med. Association," Nov. 28, 1891 ; "Annals of Surgery," April, 1892.

ANGIOKERATOMA.

Synopsis.—(Vol. 892, p. 102.) Electrolysis is excellent treatment.

APPENDICITIS. (See also "Perityphlitis.")

A. W. Mayo Robson, F.R.C.S.

Although there is not yet a general consensus of opinion to abandon the terms typhlitis and perityphlitis, we prefer to consider inflammatory affections occurring in the neighbourhood of the cæcum under the above heading, as a more accurate knowledge of the pathology of the disease enables us to state that in the vast majority of the cases the so-called typhlitis is primarily due to inflammation, ulceration, gangrene, or perforation of the appendix vermiformis. Unfortunately our diagnostic researches are not sufficiently advanced to enable us to state with absolute certainty the exact condition of affairs at the commencement of the disease, otherwise we should be able to formulate more exact rules to guide us in the treatment, for undoubtedly there are many of the milder cases probably catarrhal in origin, where the prognosis is good, and in which surgical treatment

is not called for, just as there are others, serious from the first, in which speedy operation holds out the only hopes of relief. Where the symptoms are mild and a tumour forms at the outset, the case may fairly be watched and treated medically; but with sudden and severe onset, without the formation of a tumour, the case will probably call for surgical treatment. In the latter class of cases I have always found McBurney's sign present, *i.e.*, tenderness on pressure with the tip of the finger over a point about two inches internal to the right anterior superior spine of the ileum.

The literature of appendicitis during the past year, as will be gathered from some of the references given later, is most extensive, and withal extremely interesting, but one cannot help remarking on the difference between the medical and surgical views of the subject—nay, not only do physicians and surgeons differ, but of those who advocate medical treatment some recommend **Opium** and **Rest**, while others advise the use of **Saline Purgatives**. Among the latter we may quote Dr. Saundby, whose principal remedies are **Calomel**, **Hot Seidlitz Powders**, and **Enemata**, combined with rest and hot fomentations and, in chronic cases, blistering over the tumour. Undoubtedly many of the milder forms of appendicitis resolve under medical treatment; and, even when pus has formed, in quite a number of cases it makes its way to the surface and bursts through the abdominal wall, or is evacuated by other channels. But as one can never say that it may not burst into the peritoneal cavity, and as Dr. Bull has shown, that in 12 per cent. of the cases in which suppuration has occurred this accident does happen, it is easily understood how those who realize the dangers of the disease should advocate early surgical interference. A convenient method of classification of pericæcal inflammation is that proposed by Prof. With, of Copenhagen, who describes: (1,) An adhesive local peritonitis, caused by ulceration in the appendix, and clearing up without suppuration; (2,) A local peritonitis, ending in abscess; and (3,) Diffuse peritonitis, either caused by perforation of the appendix before adhesions have formed, or by secondary rupture of the well-developed abscess. To make the classification complete, to these would have to be added a fourth form, relapsing typhlitis. But it seems to me that instead of making these four divisions, two will suffice: (1,) Appendicitis without suppuration, dependent on ulceration or catarrh, and producing local peritonitis, which has a tendency to resolution, but which is also liable to recur; and (2,) Perforating appendicitis, ending in suppuration, and producing either a local abscess or diffuse peritonitis. This, I believe, is a similar classification to that proposed by Dr. Bull, but I think he does not include the recurrent form in his first division.

In cases of recurrent appendicitis, three courses of treatment are open: (1,) Non-operative, trusting to rest, opium and diet, combined with the judicious use of enemata or aperients—of which castor oil seems the most useful—to bring about resolution, in the hope that the existing attack may be the last; (2,) Operation between the attacks; (3,) Operation on the second or third day of a seizure, as advised by Dr. F. S. Dennis, who discourages the removal of the appendix between the attacks, arguing that in the great majority of cases the disease does not recur, and that should it do so, removal at an early stage of the attack is both safe and efficient.

Before deciding on any definite line of treatment, the mortality of operative measures must be weighed against the dangers of delay. In discussing a comparatively new operation, statistical evidence is often wanting; but so far as I am able to ascertain, close on fifty operations have been performed for the removal of the appendix during the quiescent stage of chronic relapsing appendicitis, and out of this number only one patient has died. I question whether the statistics of expectant treatment would yield nearly so excellent a result. The nearest approach to a statistical estimate is a report by Fitz, who estimated the mortality of perityphlitis medically treated at 11 per cent.

Laparotomy in the early stage of acute attacks would, I feel sure, show a much larger mortality than operations undertaken when the disease is quiescent.

In a discussion at the New York Medical Society, it was remarked by one of the speakers, that he had never known a patient on whom he had operated for appendicitis to recover if the peritonitis had become general. This view will not hold now, as I have myself recorded recovery after such an occurrence, and Dr. Jalaquier[7] also records a case. In both, free lavage with boric lotion and subsequent drainage were adopted.

In operations undertaken for appendicitis, Dr. McBurney urges the importance of opening the peritoneal cavity, differing in this respect from Mr. Treves, who is in favour of avoiding such a procedure. Where there is localized abscess I would certainly try to avoid opening the peritoneal cavity, but where the pus has become diffused, the peritoneum must be opened and cleansed, and in recurrent appendicitis I have always found it absolutely necessary to open the peritoneum.

Weir[8] draws attention to the great irregularities met with in appendical abscesses, and mentions two cases. In one the abscess cavity reached upwards to the right nipple, to the median line of the thorax,

and nearly to the linea alba of the abdomen ; posteriorly it reached the renal region, and below, it extended to the crest of the ilium and Poupart's ligament. A case was mentioned (but not yet published) at the Leeds and W. R. Med. Chir. Soc., where an appendical abscess became first subdiaphragmatic, and then formed an empyema on the right side. The empyema was opened, and the abdominal abscess drained, a complete cure resulting.

Scott[12] records a case of perityphlitic abscess bursting into the rectum and bladder. A median incision was made, midway between the umbilicus and pubes, and gas and fæculent pus escaped from a large abscess cavity, which, while shut off from the general peritoneal cavity by adhesions, still contained coils of small intestine. Complete recovery resulted.

REFERENCES.—[1] Mayo Robson, "Lancet," Feb. 13, 1892 ; [2] "Therap. Gaz.," Dec. 15, 1891 ; [3] W. H. Link, "New York Med. Jour.," Jan. 9, 1892 ; [4] Saundby, "Birm. Med. Rev.," Sept., 1891 ; [5] D. N. Eisendrath, "Ann. of Surg.," May, 1892 ; [6] McBurney, "New York Med. Jour.," April 3, 1892 ; [7] T. Jones, "Med. Chron.," Jan., 1892 ; [8] R. F. Weir, "Med. Rec.," vol. xli., No. 7, Feb. 13, 1892 ; [9] Schede, Suppl. "Brit. Med. Jour.," July 9, 1892 ; [10] Jalaquier, Ibid., June 18, 1892 ; [11] D. B. Lees, "Lancet," Feb. 20, 1892 ; [12] M. T. Scott, "Med. Rec," vol. xli., No. 4, Jan. 23, 1892 ; [13] Schede, "Brit. Med. Jour." Appendix, July 9, 1892.

ASCITES (in Women). *A. W. Mayo Robson, F.R.C.S.*

Ascites unassociated with Cardiac Hepatic or Renal Disease.—Gusserow opened an instructive discussion on this subject at a recent meeting of the Berlin Obstetrical Society. He for many years has always made an exploratory incision in these cases, being ready to take away any removable morbid growth that may be discovered. The conditions which give rise to this form of ascites are, according to Gusserow : (1,) Tuberculous peritonitis or "peritonitis nodosa," where no tubercle bacilli can be found ; (2,) Papilloma of the surface of the ovary ; (3,) Carcinoma and sarcoma of the ovary, usually with similar disease of the peritoneum ; and lastly (4,) Rare cases where ascites exists in association with small non-malignant uterine and ovarian tumours or with tubal disease. In all these cases there is absence of œdema of the integuments, and no sign of disease of the liver, heart, or kidneys. He rejects exploratory puncture, whether by means of a hypodermic syringe or the old trocar. Schäffer said that the ascitic fluid in cases of dropsy from inflammation or irritation of the peritoneum is of a specific gravity always exceeding 1015 ; whilst in cases of dropsy from stasis—including hepatic cirrhosis compressing large veins, and

tumours or aneurysms pressing on the vena cava, diseases which may for long show no other symptom—the specific gravity of the fluid seldom exceeds 1012. Hence puncture is sometimes preferable to incision. The apparent cure of many cases of suspected "tuberculous peritonitis," when the ascitic fluid has been evacuated, suggests a non-tuberculous "peritonitis nodosa" imperfectly recognized by pathologists. Mackenrodt believes in that distinction, and declares that he has never known a case of cure after incision where true tubercle of the peritoneum was detected. He has frequently seen a diffused vesicular disease of the peritoneum associated with ascites—"herpes peritonei." This affection was not malignant and the ascites did not return after incision. Ascites is sometimes caused by enlarged non-malignant retro-peritoneal glands; incision seems to cure these cases. Mackenrodt objects to puncture, as it may involve haemorrhage or damage to internal organs. In incision these accidents are rare, and when they occur cannot be overlooked. Winter has not entirely rejected puncture; it allows of bimanual exploration of the pelvic organs. Incision is not without danger, and hastens death in cases of carcinoma. Gottschalk believes in a distinct peritonitis nodosa, but incision, he stated, sometimes cures true tuberculous peritonitis. Jaquet related a case of severe haemorrhage following puncture. In reply, Gusserow said that a low specific gravity of the fluid does not necessarily signify that the cause of disease is not removable by operation. Puncture does not allow of so perfect exploration as does incision.

REFERENCE.—"Centralbl. f. Gynäk.," No. 19, 1892.

ASTHMA. *R. Shingleton Smith, M.D., B.Sc., F.R.C.P.*

The relation of asthma to other diseases was fully considered in our last edition, and need not be further emphasized. The proof of the frequent causal connection between asthma and affections of the nose has led Prof. Dieulafoy[1] to adopt the local application of **Cocaine** to the nasal mucous membrane, as the first step in treating an asthmatic attack. At the onset he applies, by means of a brush, a 5 per cent. solution of cocaine hydrochlorate to the nasal fossæ, as high as possible, or the nares and throat may be sponged with the same solution for four or five minutes. Should the attack not be aborted, from 6 to 12 drops of **Pyridine,** should be inhaled on a handkerchief; if the attack has reached its acme, a $\frac{1}{2}$ of a grain of **Morphine Hydrochlorate,** hypodermically, which, if necessary, may be repeated at an interval of a quarter of an hour.

W. Jones[2] records the results of treatment of twenty-three cases of asthma. The cases were under observation for two years after discon-

tinuing treatment ; nineteen recovered, two were markedly improved, and two derived no benefit. Their ages ranged from eighteen to fifty. Duration of disease was from two to eighteen years. Cases one to six presented exostoses springing from the nasal septum and pressing on the middle turbinated bone. These were removed, with the result that the asthma was quite relieved. Case seven had great hypertrophy of both middle turbinated bones. Destruction of these by the galvano-cautery quite cured the asthma. Cases eight to fourteen were all cured by destroying hypertrophy of the turbinated bones. In cases fifteen and sixteen, removal of nasal polypi produced the same effect. Cases seventeen, eighteen, and nineteen were due to deviated septum. The septum was in each case straightened ; in one case it remained straight, and the asthma disappeared ; in the other two the operation failed. Cases twenty and twenty-one had asthma with atrophic rhinitis and areas of hyperæmia on the middle turbinated bones ; treatment by cauterization with **Chromic Acid** was successful. Cases twenty-two and twenty-three also had atrophic rhinitis ; cauterization in these cases, however, only intensified the trouble. The cases are held to show that in all cases of asthma attention should be given to the nose, for nasal operations are frequently curative, and the duration of the asthma does not seem to affect the prognosis.

REFERENCES.—" L'Union Méd.," No. 48 ; " Therap. Gaz.," July 1892.

Synopsis.—(Vol. 1892, p. 113.) De Havilland Hall advises **Nitro-glycerine** in some cases, giving 1 minim of the alcoholic solution in ½ ounce dilute **Chloroform** water directly the paroxysm ensues, repeating this in half an hour or an hour, according to urgency.

Pearce recommends **Nitrite of Sodium** 3- to 4-grain doses alone, or combined with **Hyoscyamus** if insomnia exists.

Watson has successfully treated a case due to polypi and hypertrophy of turbinated bones by thorough clearance with the **Ring Knife.**

BERI-BERI. *Frank J. Wethered, M.D.*

This is a disease of large importance in the East. The following remarks are taken from a paper by Dr. W. Duncan Scott, published in the " Practitioner " for May, 1892.

The disease appears in two forms, the wet and the dry, of which wet beri-beri is the acute form. It is ushered in by fever and *malaise.* The fever is sometimes slight, and is of intermittent character and irregular ; sometimes it is high. As the fever passes away, or even earlier, there occurs more or less swelling, accompanied by weakness, especially of the knees, and some numbness. This swelling is characteristic, and is noticeable principally over the dorsum of the foot and over the shin. It is caused by serous

infiltration of the subcutaneous cellular tissue. In bad cases there occurs great œdema of the scrotum and of the penis, causing what has been termed "ram's-horn penis." Anasarca in other parts is rare at first, and ascites comes on sooner than cutaneous œdema of the upper extremities. In acute and severe cases hydropericardium occurs sometimes this is very marked, and with it there may be hydrothorax, but this is less obvious.

The muscles of the calf very commonly have a brawny feel (even when œdema is not marked), and are hyperæsthetic to pressure. The knee-jerk is generally absent and always much enfeebled.

The action of the heart is tumultuous and excited. The pulse is full and strong, like that of fever, and the rate from 90 to 100 per minute. Palpitation is complained of, or a sensation of pulsation in the epigastrium.

There is oppression of breathing as of a weight on the chest, or as if there were something pushing upwards from the stomach. Spasmodic dyspnœa occurs, possibly from affection of the phrenic nerves and diaphragm, more probably from hydropericardium.

The characteristic œdema is followed by or accompanies the early stages of a neuritis causing distinct nervous symptoms.

Dry beri-beri is frequently a sequel to wet beri-beri, and commences with fever. After the œdema goes down, the nervous symptoms become prominent. In other cases the disease is purely nervous from the first, and the prominent symptoms are paresis and muscular atrophy, without any previous circulatory disturbance. Most characteristic are numbness and stiffness behind the knees. There is generally anæsthesia and always some paræsthesia of the extremities. Prickling, tingling, or tickling sensations about the knee, or calf, or sole of the foot, are common. The knees are always weak, and there is generally a helpless dropping of the feet. The patient may walk lifting the knees high and letting the foot hang; but other cases may have more of a spastic character. In the former, the action has been compared to that of a man walking with heavy clothes dripping with water; in the latter, the knees are stiffened and the toes pointed. There is always much wasting of the calf and thigh muscles, and the calf is generally, but not always, painful to pressure. The knee-jerk is sometimes exaggerated, sometimes absent. The Argyll-Robertson symptom does not occur.

There are three conditions generally recognized as associated with the occurrence of beri-beri:—

(1,) *Defective Dietary.* To this Dr. Rowell and Surgeon-General Takaki are inclined to assign exclusive importance, pointing out the

consequences of a badly-arranged rice diet, deficient in nitrogen; and adducing statistics which very strongly support them. Ogata and Lacerda both trace the disease to bad rice, but each attributes it to a different micro-organism. Gelpke and Miura lay the blame on bad fish.

(2,) *The presence of Decaying Matter—especially Vegetable.*—Anderson associates the disease with defective hygiene and overcrowding, and Scheube also notes its prevalence in large cities. The prevalence of beri-beri in the jungles of the Straits Settlements, where it appears to break out afresh, is sufficient proof that there is no necessary connexion between old occupation of the ground or long-continued bad hygiene and the disease. But there is nothing to show that soil and climate generally have no influence. There is a remarkable unanimity among writers on the subject as to the beneficial effect of a change of locality upon the symptoms. Simmons and Scheube attribute the disease to a miasma, the former noting its occurrence specially in low-lying towns, while Weintraub traces it to a "noxa" which enters the body through the respiratory system. Dr. Taylor associates it with a spirillum which he has found in the soil as well as in the food; and Pekelharing assigns as the cause septic organisms found in the earth, chiefly in dwellings where large numbers of people congregate. Cornellissen and Sugenoya come to the conclusion that beri-beri is contagious, and that the *materies morbi* may infect wooden structures and wearing apparel. The general experience throughout the Straits Settlements is, however, against its contagiousness.

(3,) *Dry and Hot Weather.*—The greatest prevalence of the disease corresponds with the dry weather. During and immediately after the autumn rains there is a decrease; but as the year goes on, and the dryness and heat increase, there is an increase of beri-beri. Scheube in his paper on *kakké* in Kioto remarks that the greatest frequency of the disease is in July and August, the hottest months of the summer.

In quite early stages the best medicines are **Tonics,** which regulate the action of the sweat-glands and the nervous system. There may even be some advantage in the moderate opium-smoking in which many of these men indulge, by its promoting a reaction of the skin.

Diuretics generally are extremely useful, especially **Acetate of Potassium** and **Spirits of Juniper.** Patients who are becoming convalescent often remark upon the increased flow of urine. The beneficial action of digitalis is not certain, unless in cases where the heart is in need of stimulation; so that although this is generally the

case in chronic cases, digitalis is not to be adopted as a routine treatment. In acute beri-beri digitalis is positively deleterious. While both spirits of juniper and acetate of potassium do good, it is again difficult to say what has the better effect. The reason of this appears to be that the general stimulating effect of the juniper, as well as its action upon the urinary tubules, is very useful; but that, on the other hand, the system of the beri-beri patient requires an alkali. Hence the advantage of using in cases of any severity **Ammonia, Bicarbonate of Potassium,** and **Acetate of Potassium,** along with **Belladonna.**

Dr. Scott states that the drug which he has found most useful in dry beri-beri is **Nitrate of Silver.** Many of these cases are usually treated merely with tonics, especially **Nitro-Muriatic Acid, Iron,** and **Strychnine**; and with good diet they slowly gain strength. But the course of the disease is shortened by the use of nitrate of silver. There is no doubt a stage of the disease and of organic debility which is beyond the action of nervine tonics such as this: and in these cases long preliminary dieting is needed. On the other hand in many patients the chronic neuritis is the principal defect, and the atrophy appears not to be so deeply engrafted into the system. Upon such, nitrate of silver has a striking effect.

All the conditions under which beri-beri occurs are more or less favourable to the supposition that an ascomycetes (Lacerda), which may exist in the soil or may be connected with the food (rice or fish), is the real cause of the disease. But others attribute it to a diplococcus (Pekelharing), a bacillus (Ogata), a spirillum (Taylor). This micro-organism may, so long as it exists only in the blood, cause wet beri-beri. It generates a poison which acts like muscarine and originates an excessive acidity along with disordered action of the sweat-glands and kidneys.

The writer has sought for the micro-organisms in three cases which were admitted into the Middlesex Hospital under the care of Dr. Sidney Coupland, two being of the wet variety and one of the dry; but in none of the cases were any organisms found in the blood.

BLADDER (Diseases of). *E. Hurry Fenwick, F.R.C.S.*

Strangury.—Benedikt[1] gives notes of two cases of strangury that were quickly relieved by applying the electrostatic douche and sparks to the spine and hypogastrium. Previous treatment had failed to ameliorate. Case I. was due to tabes of long duration, strangury being the most distressing symptom. Increasing relief of this condition was obtained by each application. In Case II. the affection

followed an operation for hæmorrhoids many years before. Immediately after the first sitting, the number of nocturnal micturitions sank from twenty-five to nine. A fortnight's treatment reduced the abnormal state to a minimum. More recent successful cases lead him to view this therapeutical means as a specific.

Cystitis.—Guyon recommends instillations of a solution of **Perchloride of Mercury**, 1 in 5000, in cases of cystitis, especially in the tubercular form. He reports sixteen cases of cystitis treated by this method. Eight were cured, six were greatly benefited, and two much improved. Half a drachm is the amount to begin with, increasing to a drachm. The catheter should be passed just through the compressor urethræ, and the fluid injected into the bladder. None should be permitted to escape into the anterior urethra, for here it causes inflammation. Before making an instillation the bladder must be emptied. (The collator would advise much weaker solutions to be used at first, 1 in 10,000, or 1 in 20,000. As tolerance is obtained, 1 in 5000 may be used. In many people with chronic cystitis, the sublimate solution causes a good deal of suffering.)

Tyson[2] suggests that the **Santal Oil** should be administered before meals, and believes the drug "is as well, if not even better, borne than when given after food." His favourite form of injection is **Sodium Salicylate** (a drachm to the pint). He believes **Alum** has been undervalued, and suggests it should be substituted for the salicylate in those cases in which the pus does not diminish as rapidly as is desired.

Dr. Mansel Sympson[3] states that there are undoubtedly cases where **Salol** produces grave symptoms of collapse, and these are, he believes, "those wherein the kidneys have been extensively damaged before the cystitis occurred. They are really cases of carbolic acid poisoning." He considers salol to have very beneficial results in cystitis, and gives it in the following mixture:—

℞ Salol	ʒij	Aq. Cinnamomi	ʒxij
Pulv. Acaciæ Gummi	q.s.	Ft. Mistura	

Sig.—ʒss 4tis horis, vel sextis p.r.n.

Salol is very conveniently dispensed in 5-grain pills (Rep.).

Belfield[4] gives a preliminary note on the value of **Iodine Trichloride**, and records four cases in which it was employed. Two of the cases were vesical tuberculosis, and two were those of tubercular epididymitis. All were considerably improved. The method of administration is by hypodermic injection, ⅛ to ¼ per cent. in distilled water.

Tuberculosis of the Bladder.—Pilcher[5] details four cases of tuber-

culosis of bladder treated by suprapubic cystotomy. Two were improved, two were not. The author doubts whether any amelioration results from topical treatment, attributing the improvement to drainage and rest of the bladder. He thinks the operation should be done whenever the cystitis does not readily yield to the well-known constitutional and local treatment, and that the drainage should be continued till the ulcers cicatrize, the urine becomes healthy, and the bladder normal in its action.

Bladder (*Electric Light Illumination of*).—Max Nitze,[6] of Berlin, describes a new form of operating cystoscope, which is not larger than the evacuating catheter used in litholapaxy, and can be passed along a normal urethra. By means of it (1,) Topical applications may be made to circumscribed patches without injury to the healthy surface; (2. Ulcers may be cauterized by galvano-cautery, etc.; (3,) The pedicle of a polypoid growth may be caught in a loop of wire, and removed either by simple constriction, or heat; (4,) Growths may be avulsed by forceps; (5,) Foreign bodies may be removed; (6.) Small calculi, or fragments of larger size, either removed or crushed.

Meyer[7] comes to the following conclusions as to the value and application of the electric cystoscope: (1,) In all obscure reno-vesical diseases cystoscopy should be practised—if necessary, repeatedly—before operative interference for diagnostic purposes is resorted to; (2,) There are a number of causes which make cystoscopy impracticable; (3,) Cystoscopy is an easy and harmless examination, but its successful employment requires experience; (4,) It should be performed as a *dernier ressort*, after all other well-known means for making a diagnosis have been exhausted; (5,) If properly applied, cystoscopy will generally clear up an obscure disease of the bladder; (6.) In most cases we can determine, with the help of electric illumination of the bladder, whether we have to deal with a disease of the bladder or of the kidneys; (7,) We can thus find out whether there are two working kidneys, also whether only one of the two kidneys is diseased, or both; (8,) We shall most probably soon be able, perhaps in the greatest majority of cases, after sufficient practical experience and with the help of proper cystoscopic instruments designed for this purpose, to catheterize the ureters, and thus gather, in a bloodless manner, the urine from each kidney separately; (9,) We can thus make out, in certain cases, by observing *the character* of the jets of urine, especially by *timing their frequency and duration* at the urethral orifices, whether the other kidney is doing the work for the one which is diseased; (10.) These facts will tend to make superfluous, in the majority of cases at least, a prelimi-

nary suprapubic or perineal incision for diagnostic purposes, as well as a nephrotomy performed for determining the action of the other (not diseased) kidney. They greatly widen and strengthen our means for determining the indication and prognosis of nephrectomy ; (11,) With the aid of Nitze's newest instrument, the operating cystoscope, we may look forward to being able to carry on intravesical treatment under the direct guidance of our eyes.

Calculus.—What special indications should govern a choice of operation as between lithotomy and litholapaxy?

Mr. Edward Keyes,[8] the consulting surgeon to the Bellevue and Charity Hospitals of New York, makes such very pungent and valuable remarks upon the above question, that it is wise to reproduce them:—

"Facts are eternal and the premises from which conclusions must be drawn are not changed from what they have always been, but our appreciation of the significance of facts varies. Old conclusions must now be modified by the light thrown from the three brilliant modern foci : (1,) The admirable results of litholapaxy as applied to male children ; (2,) The undoubted triumphs of cystoscopy in perfecting diagnosis, more particularly as to the physical condition of the urinary tract ; (3,) The accumulating confidence of those who are testing the value of suprapubic prostatectomy, as a radical measure for the relief of the enlarged prostate.

"These three considerations are the only ones I recognize as powerful in modifying our choice of operation, from what it would have been five, or even three, years ago.

"This is the day of attempts at exact physical diagnosis. Time was but is no longer, when a reputable surgeon may presume to advocate any one operation as applicable to all cases of stone. The same common sense and logical weighing of his patient's necessities must shape a decision in selecting the operation in this as in any and every other surgical field.

"To approach the subject then from its most material side, I ask, Is the size of the stone now a prime factor in deciding the method by which its removal should be undertaken? At the present day and date the answer must be decidedly—No.

"Of course, small stones are easier to dispose of than large ones, by the lithotrite, and it seems natural that they should receive this method, larger ones being left to the knife. Yet this is so only in a negative sense, for a large stone, if large enough to be mechanically beyond the clasp or the strength of the lithotrite, cannot be managed by this instrument ; but aside from this the size of the stone is a matter of no significance at all.

"In a sort of negative sense, even the paradox may be sustained, that the smaller the stone the less is it suited for the lithotrite in any but very expert hands. For one of the slurs cast upon lithotrity by its enemies is that it often leaves behind a last fragment to become the nucleus of a new stone.

"Yet if this last fragment, as is the fact, be so hard to find, even by a competent lithotritist, how much more difficult must be the finding of a very small stone than of a good-sized one, by a surgeon inexpert in the use of the crushing instrument—for surely there can be no doubt as to the relative skill required to perform creditable lithotrity as compared with creditable lithotomy.

"I demonstrated this in a statistical paper, discussing the value of the then new operation, litholapaxy, many years ago, wherein it appeared that the percentage of mortality diminished rapidly as the number of operations by a given surgeon multiplied. At that date the death-rate was 2½ per cent. for surgeons having performed five or more than five operations, while it was 18 per cent. for surgeons having performed less than five operations each.

"Any competent surgeon who can handle his knife well in general work can perform lithotomy perfectly, but he cannot perform lithotrity well until he has trained his hand by actual experience in a number of cases. For this reason alone, lithotomy is, has been, and justly must always continue to be, the more popular operation with the general body of operating surgeons; but beyond this there are also other considerations, in modern days, throwing the balance in favour of lithotomy.

"For notwithstanding that the statistics of lithotrity—or litholapaxy, for this is modern lithotrity—are splendid in competent hands, and that in such hands if the stone can be crushed, it may generally be safely crushed; yet, even in such hands, the whole question ought to be, not does the stone justify crushing, but does the physical condition of the patient and of his urinary tract justify lithotrity?

"And this view of the matter should, I think, obtain all through life. The age of the patient has nothing to do with it, and the stone nothing, except in lending itself mechanically to the possibility of lithotrity.

"The very exceptionally brilliant results obtained in India, by Keegan and by P. J. Freyer, with a wonderfully minute mortality, and repeated with less brilliancy in other countries, show that the very young male infant, even with large calculus, is a most fitting subject for successful litholapaxy. If the stone in the infant or child be too large for such crushing instruments as will pass his urethra, it is also

too large for proper extraction by the perineal route, and the suprapubic operation is called for; otherwise, litholapaxy should always be the operation of choice. For even the male bladder, before puberty, with its dependent orifice and no prostate, needs no surgical drainage. Take out the stone by crushing, and nature does the rest. I think it therefore safe to say, before puberty in either sex, always crush when practicable; for large stones, cut above the symphysis. It is far easier to crush successfully in the smooth bladder of the child than in any other. In middle life, some foreign bodies—glass, pins, pencils, etc.—naturally demand the knife, and the perineal route may be properly preferred, yielding as it does a less mortality than the suprapubic, and being often as suitable for the detection and safe removal of the offending body. But, aside from such adventitious nuclei, when the stone alone is considered, in the period between early adolescence and late middle age—say fifty—here assuredly, if the stone be very large, the high operation is suitable, while if it can be dealt with by the lithotrite it should be crushed and washed out, unless the physical condition of the parts contraindicates this method.

"These physical contraindications are few, being notably tight, deep urethral stricture, intense long standing cystitis, with altered mucous membrane (needing prolonged rest and drainage), sacculated stone, or concomitant, vesical tumour. Of these conditions two—urethral stricture and chronic cystitis—call for the perineal operation, the first median with liberating lateral vesical incision if required, the second lateral, the bladder neck being well cut into to insure prolonged free drainage; whilst the sacculated stone and concomitant vesical tumour naturally demand the suprapubic opening. Here it is that the cystoscope lends powerful aid in deciding what course shall be pursued.

"If the stone be too large for crushing, here as in the child, and for the same reason, the suprapubic route should be employed.

"Finally we come to the old man, and it is here, in my opinion, that modern experience instructs us to set aside or modify earlier conclusions.

"Formerly it was exactly in these cases that lithotrity (or litholapaxy) was most ardently advocated, for it was contended that, with the large prostate, there was no hope of having a healthy bladder, even after cutting, therefore why take the risk of the knife; and if the patient was in catheter-life why not employ the lithotrite, take away one of his sources of irritation, and let him keep on using his catheter?

"Now, while this argument holds its force still in the case of those old prostatics whose toughened urethræ make no protest against the frequent introduction of instruments, and who do not fret under this

necessity for the mechanical performance of a natural function, yet there are a set of cases which I, at least, am learning each year to respect more and more—on account of an unhappy experience with some of them—cases in which the necessary mechanical disturbance attending litholapaxy so stirs up the vesical neck—whether every fragment be removed or not—that cystitis more or less intense and prolonged follows the operation, and both the patient and surgeon come to regret that the more radical cutting operation had not been decided upon at first.

"To this class belong: (1,) Prostatic cases that have not used a catheter at all, or have not become habituated to the instrument; (2,) Most of the pallid, flabby, fat subjects who show early the corneal arcus, and especially, it seems to me, (3,) Those who exhibit a tendency to recurring localized eczema (not only of the extremities), and to flatulent dyspepsia.

"These cases, if properly prepared, do very well under lithotomy, and in them the suprapubic method should be adopted, because it allows the surgeon to deal, at a single sitting, not only with the minor necessity—the small stone—but also with the more important and permanent disability—the enlarged prostate, by prolonging the suprapubic lithotomy into a prostatectomy—and making the patient's necessity become the surgeon's opportunity."

Surgeon Major Forbes Keith[9] recommends the complete pulverization of the stone at a single sitting, and the *débris* to be evacuated without the aspirator. This step forward had already been taken by Guyon of Paris, and was being mooted before the important communication of Dr. Keith appeared.

The pith of the improvement is to make use of the muscular contraction of the bladder wall to expel the fragments of the crushed stone.

The technique of the operation is as follows: After the administration of chloroform, the first step is to thoroughly wash out the rectum with Condy. The bladder itself must also be thoroughly irrigated if the urine is in any way tainted, as it frequently is in the aged, after which it will be found more tolerant of the auxiliary fluid. When a sufficient quantity of the latter has been introduced, the point of the lithotrite on its first introduction is met by the index finger of the left hand immediately on a plane behind the sphincter ani, and is then guided by the finger through the prostate and into the bladder. The stone is broken up in the first instance by the largest instrument admissible; a size smaller is preferred to finish the operation. The stone is then crushed to fine sand. Some stones break up into finely

divided mud or sand, which, mixing with the fluid in the bladder, wells up between the lithotrite and the walls of the urethra. It has various colours according to the quality of the stone, appearing sometimes almost milky white, and passing through various shades, such as from meerschaum and fawn to brick-red. The welling up of these colours always warns the surgeon not to go on working with the largest lithotrite the urethra can admit, but to change it for one of much smaller size, otherwise he will find great difficulty in removing it, owing to the instrument having lost its glossy smoothness and become coated by a bluish-black film, and the urethral mucous membrane itself will be found to have lost its oily smoothness, and become coated with finely divided mud.

An evacuating catheter is finally introduced, and the bladder allowed to empty itself. Water is then thrown in by means of a syringe or a special irrigating can, and this again is ejected by the bladder.

On the repetition of this process for a few times the *débris* of most stones is rapidly evacuated. In children, where the *débris* must be reduced to finely divided powder or mud before it can get through the eyes of such small catheters or cannulæ, evacuation of the *débris* can be effected by merely letting the water fall out of the syringe into the mouth of the evacuating catheter without in any way connecting them, and the reflex action of the bladder thus excited will at once cause the evacuation of the *débris*.

Since receiving new instruments from home (in February, 1891), Dr. Keith has had a series of one hundred operations without a death, and one hundred and fifty-seven with three deaths.

REFERENCES.—[1] Benedikt, "Wien. Med. Presse.," 27, 1891, "Brit. Med. Journ.," April 2, 1892 ; [2] Tyson, "Practitioner," February, 1892 ; [3] Mansel Sympson, "Practitioner," June, 1892 ; [4] Belfield, "Journ. Cut. & Gen. Urin. Dis.," Aug., 1892 ; [5] Pilcher, "Annals of Surgery," May, 1892 ; [6] Nitze, "Centralbl. für Chirurgie," No. 51, 1891 ; [7] Meyer, "New York Med. Journal," vol. lv. No. 7 ; [8] Keyes, "Annals of Surgery," March, 1892 ; [9] Forbes Keith, "Brit. Med. Journ.," June 11, 1892.

BLADDER (Rupture of).

The writer was summoned to a case of supposed rupture of the urinary bladder. Water could be injected, but it was uncertain whether there was not a partial intraperitoneal rupture. By means of the electric cystoscope the bladder was proved to be intact, although many of the symptoms of ruptured bladder were present. In those cases in which the bladder is completely ruptured, there is no difficulty in diagnosing the rent by means of Cabot's method (*vide infra*), but when the laceration is small, or is valvular or incomplete, the bladder

usually tolerates four ounces of water, and this is a medium sufficiently large to use the cystoscope in. Any breach of surface can then be seen.

Weir[1] makes a further contribution to Cabot's well-known method of diagnosing intraperitoneal rupture of the bladder. Cabot's method consisted in throwing a known quantity of fluid into a previously empty bladder. If this viscus is uninjured, the same quantity should be returned again through the catheter. To be of positive service such a test should, according to Weir, be applied several times and with a decided amount of distension of the bladder. The author considers that this test may further be improved by combining rectal and vesical distension, with a known quantity of water for the latter viscus. The bladder outlined in this way above the pubes is only to be confounded with extravasation occasioned by the test, and this is controlled by the measurement of the fluid finally emptied from the bladder.

If dulness on percussion above the pubes occurs, and the fluid withdrawn from the bladder is lessened in quantity, an extraperitoneal rupture can be inferred. If no dulness or recognized vesical distension above the pubes takes place, but there is diminution of the injected fluid, intraperitoneal or subperitoneal postero-inferior rupture can be assumed.

If the latter exists, a rectal examination made before and subsequent to trying the test will show increase in the extravasation in that region, as was proved by the author in a case under his charge. Where the site of rupture cannot be determined with accuracy, suprapubic incision should be made, when any slight infiltration exterior to the bladder will be revealed. If this incision does not throw light on the case, the bladder should be opened sufficiently for digital and ocular inspection.

The occasional difficulty of diagnosis of ruptured bladder is well illustrated by the following case, reported by Mr. Hulke : C.E., aged thirty-three, was butted sharply in the abdomen, and immediately felt great pain. He had passed urine two hours previously. The abdomen was resonant, and signs of shock were present, but he was unable to micturate. A catheter was passed without difficulty, and six to eight ounces of urine slightly tinged with blood were drawn off. A small blood-clot was entangled in the eye of the catheter. Nine hours after, six ounces of similar urine were drawn off. Six hours after that, when Mr. Hulke first saw him, the shock had to a great extent passed off ; but there was central dulness suggestive of full bladder, which disappeared on catheterization, twenty-two ounces being drawn off very

slightly blood-tinged. No rent was found by the catheter, though searched for.

The next day pain increased, and the urine, which was drawn off was offensive : some vomiting.

The next day symptoms of well-marked peritonitis appeared, and a laparotomy was performed. A rent two and a half inches long was found in the posterior wall of the bladder. The operation lasted two hours. Patient died eighteen hours after. Autopsy showed peritonitis, but the suture of the bladder was proved to be water-tight.

REFERENCES.—[1] Weir, "Therap. Gaz.," Jan. 15, 1892 ; "Boston Med. and Surg. Journ.," vol. cxxv. No. 19 ; [2] Hulke, "Lancet," Pt. ii., p. 197, 1892.

BONE (Diseases of). *F. S. Eve, F.R.C.S.*

Mr. Robert T. Morris considers that it is sometimes desirable to remove dead bone without subjecting a weak patient to a dangerous or deforming operation. Attempts have been made with some success at clearing out this bone by a process of decalcification, but there are two chief reasons why failures have resulted as a rule. In the first place, it was discovered that superficial layers of dead bone were decalcified easily enough, but the acids did not reach deeply through the mass, especially if portions were infiltrated with caseous or fatty *débris*. In the second place, cellulitis was very apt to develop during the course of treatment. After much experimentation, Morris has finally adopted a method of work which seems to be complete. An opening is made through soft parts by the most direct route to the seat of dead bone, and if sinuses are present they are all led into the one large sinus if possible. The large direct sinus is kept open with antiseptic gauze, and the wound allowed to remain quiet until granulations have formed.

Granulation tissue contains no lymphatics, and absorption of septic materials through it is so slow that we have a very good protection against cellulitis. The next step consists in injecting into the sinus a 2 or 3 per cent. solution of **Hydrochloric Acid** in distilled water. If the patient is confined to bed the injections can be made at intervals of two hours during the day ; but if it is best to keep the patient up and about, the acid solution is thrown into the sinus only at bed-time. In either case the patient is to assume a position favourable for the retention of the fluid. Decalcification takes place rapidly in exposed layers of dead bone, and then comes the necessity for another and very important step in the process. At intervals of about two days an acidulated pepsin solution is thrown into the sinus (distilled water, oz. iv ; hydrochloric acid, oz. xvj ; Fairchild's

pepsin, oz. ss.), and this will digest out decalcified bone and caseous or fatty *debris* in about two hours, leaving clean dead bone exposed for a repetition of the procedure. The treatment is continued until the sinus closes from the bottom, showing that the dead bone is all out.

Even in distinctly tuberculous cases the sinuses will close if apparatus for immobilizing diseased parts and tonic constitutional treatment are employed.

If suppuration is free in any cavity in which we are at work, it is well to make a routine practice of washing out the cavity with peroxide of hydrogen before each injection.

REFERENCE.—"New York Med. Jour.," March 19, 1892.

BRAIN (Gross Lesions of the). *William Thorburn, B.S., F.R.C.S.*

In this branch of surgery some interesting cases have been recorded, but little progress has been made in the fascinating question of the treatment of tumours. The following is an example of a successful operation for a focal lesion: Boyd[1] had a patient who sustained an injury to the left side of the head, symptoms of "concussion" lasting for two or three weeks, and leaving occasional headache. After some two months paralysis commenced in the right arm and spread down to the leg, being accompanied by coma and fever; the symptoms developed in about ten days. The diagnosis was abscess over the centre for the right arm, but operation revealed an encysted clot, from which was evacuated about four ounces of dark red fluid. Complete recovery ensued, consciousness returning a few hours after the operation, and motor power commencing in both right limbs on the following day.

REFERENCE.—[1] Boyd, "Lancet," 1892, vol. i, p. 531.

BRAIN (Injuries of the). *William Thorburn, B.S., F.R.C.S.*

Miles[1] has undertaken a number of experiments with the view of determining the exact pathology of the group of symptoms classified as "concussion." There are three chief theories on this subject, viz.: (1,) The "vibration theory," which attributes the symptoms to molecular vibrations; (2,) The "multiple capillary hæmorrhages theory," which assigns them to the small scattered hæmorrhages usually found after death; (3,) The "vascular disturbance theory." With most modern observers, Miles accepts the universal presence of hæmorrhages, despite the well-known but old cases of Littré and others, who believed that death from "concussion" might occur without any gross appreciable lesion. These hæmorrhages are, however, not regarded as the cause of the symptoms, the latter being attributed to a reflex vascular disturbance. The results

obtained confirm and extend those of Duret, and are thus summarised by the author: (1,) That the group of phenomena, commonly spoken of as "concussion of the brain," is the result of a temporary anæmia of that organ; (2,) That this anæmia is the reflex result of stimulation of the restiform bodies, and perhaps other important centres in the region of the bulb; (3,) That these parts are stimulated by the wave of cerebro-spinal fluid, which rushes through the aqueduct of Sylvius, the foramen of Magendie, and from the subarachnoid space of the brain to that of the cord when a severe blow is dealt over the skull; (4,) That in accordance with the laws of hydrostatics this cerebro-spinal fluid wave will disturb the equilibrium of the ultimate nerve cells throughout the central nervous system; (5,) That the hæmorrhages found throughout the brain substance and on its surface are to be ascribed to the recession of the cerebro-spinal fluid, which naturally supports the blood vessels of the cerebrum; (6,) That the petechial hæmorrhages found in cases of so-called concussion are not the proximate cause of the symptoms of that condition. They are rather to be looked upon as an index of the force producing the injury, than as the cause of the resulting phenomena.

Under the title of "Traumatic Tubercular Meningitis," Hilbert[1] records a case of meningitis coming on a month after a head injury, and fatal in its results. At the autopsy there were found the usual appearances of tubercular meningitis, together with tubercular deposits in various parts of the body, but there were no signs of injury. Two theories are advanced to explain the manner in which a trauma may evoke the disease, viz.: (1,) By admitting of access of bacilli through an open wound; (2,) By liberating encapsuled bacilli and providing them with an injured tissue in which to grow. In the present case the latter only is tenable, as there was no wound, and Hilbert notices that the interval elapsing between the receipt of the injury and the outbreak of meningitis—one month—is in accordance with Baumgarten's observations as to the period of inoculation of tubercle.

The present writer has recently had under his care a case very similar to the above, but is not satisfied as to the causal relationship of the injury and the disease. The question is, however, one of considerable medico-legal importance, and further data are required for its solution.

REFERENCES.—[1]Miles, "Brain," 1892, Part 2; [2]Hilbert, "Berlin. klin. Woch.," 1891, No. 31.

BRAIN (Surgery of the). *William Thorburn, B.S., F.R.C.S.*

The most elaborate recent paper upon this subject is by Sahli,[1] and is entitled "On the Operations of Cerebral Surgery, from the

point of view of a Physician." The paper deals only with non-traumatic cerebral diseases, as tumours, abscesses, epilepsy, meningitis, developmental errors, and the surgical treatment of intra-cranial pressure, and of insanity. Topography and diagnosis are also considered. We may summarise the more important sections seriatim.

I. *Tumours.*—The majority of these cannot be extirpated, as the symptoms of general pressure mask the special effects and thus render localization impracticable. Among these, again, we can operate only upon those which are in or near the cortex, not too large, well encapsuled, and not metastatic. Keeping within these limits it is estimated that about one-third of the cases operated upon have recovered, and that the successful cases almost invariably presented subsequent paralysis of that portion of the cortex submitted to operation.

II. *Abscesses.*—These are much more favourable cases for operation, as they can generally be localized either by association with an injury, or, if due to otitis, in the temporo-sphenoidal lobe or cerebellum; and even if the trephine does not at once expose them, we may with comparative safety resort to exploratory puncturing. The operation of evacuation is not very dangerous; of eighteen cases thirteen were completely cured, and one partially so.

III. *Epilepsy.*—Hardly anything is to be hoped for in cases of general convulsions with loss of consciousness resulting from general cerebral hyper-excitability, and rarely traumatic in origin. On the other hand, in a limited Jacksonian epilepsy (such being generally traumatic) we may expect something from excision of the affected centre. Even in these cases the results have, however, not been very satisfactory, either because the removal of the centre was insufficient—its neighbours having also become hyper-excitable—or because there has remained a scar which forms a new focus of irritation. Progress in this direction is chiefly to be expected from an improvement in the technique, and especially in better identification of centres by the electric current, and in more accurate clinical localization by observation of slight symptoms.

IV.—Incurable lesions are those such as *Irremovable Tumours*, and *Tubercular Meningitis*, in which we can only relieve such symptoms as pain and optic neuritis by diminishing intra-cranial pressure. Sahli holds that these measures deserve more consideration than they have hitherto received, although the operations are not without danger. The few cases at present recorded do not admit of a satisfactory judgment. Sahli inclines to operation over the anterior portion of the brain by trephining or perforation with a blunt osteotribe, the dura not

being opened, but the ventricles being subsequently drained by a trocar and cannula.

V.—Craniotomy for *microcephaly* is regarded as still only on its trial. In non-traumatic *hæmorrhage* operation is useless, as not only can the region rarely be diagnosed at an early period, but the symptoms are mainly not those of pressure. Ligature of the carotid for cerebral hæmorrhage is also discountenanced, as it must usually be too late to arrest the bleeding, and it may do harm by extending the area of functional disablement. Sahli protests strongly against *exploratory operations* and against trephining for persistent *headache*. Operations for *insanity* are set aside as wanting in the sanction of scientific basis; nor are cerebral *gummata* regarded as suitable cases for trephining.

Many cases of cerebral surgery have been published during the past year, an interesting series of seven operations being reported by Hammond.[2] These cases, which are fairly typical of the experience of to-day, are as follows: (1,) A case of insanity of doubtfully traumatic origin—temporary relief, followed by relapse; (2,) Paralysis following injury—improvement temporary only; (3,) Traumatic epilepsy in a child—no return for two years after operation; (4,) Epilepsy and paralysis, supposed to be due to tumour—operation revealed a large cyst—death; (5,) Traumatic epilepsy and paralysis—death; (6,) Paralysis and epilepsy from cerebral syphilis, improved, but not cured, by iodide of potassium. After incision of the dura mater a little fluid escaped, but nothing else was found—recovery; (7,) Old injury—extreme pain under the cicatrix. Operation revealed a spicule of projecting bone on the inner table of the skull, and beneath this a vascular tissue, which was removed—recovery. The chief lesson to be drawn from these records is the necessity for much more precise knowledge, both as to the pathology and the diagnosis of cerebral lesions.

REFERENCES.—[1]Sahli, "Sammlung klin. Vorträge," July, 1891, No. 28; [2]Hammond, "Med. News," Oct. 31, 1891.

BRAIN (The Relief of Intra-cranial Pressure).

William Thorburn, B.S., F.R.C.S.

Excessive intra-cranial pressure may arise from too small size of the cranium (microcephaly), or from increase in the bulk of its contents, as in hydrocephalus, meningitis, tumours of the brain, and, according to some writers, general paralysis of the insane. It is in connection with the attempted relief of these conditions that we meet with the most interesting cerebral surgery of the past year.

In *microcephaly* Lannelongue[1] introduced his operation commonly called craniectomy, but better described as craniotomy, which consists

in making openings or incisions into the skull, so as to allow it to expand and thus, as it were, provide artificial sutures in lieu of those which have been prematurely closed by disease.

Horsley[2] reports two cases in which he operated. The first was a microcephalic child, aged three years, active and muscular, but obviously idiotic, filthy, and unable to swallow unless food was placed at the back of the throat. A strip of bone, tapering at either end, was removed by the trephine and bone forceps from the left of the middle line of the cranium, the strip extending from before back for nearly the entire length of the skull. The dura bulged into the opening which was closed by the skin flap made for its production. Improvement was noticed even from the third day after operation, especially in expression, restlessness and signs of pain.

The second child, aged seven years at the time of operation, was born at the seventh month, the fontanelles being then closed. At the age of seven months it began to have fits; at the end of a year it used a few words, but soon again ceased to speak; at the fifth year it had a long illness, chiefly characterized by fever and semi-consciousness. The head was, at the time of operation, deficient in the frontal region. There were fits every night, the child was destructive, passionate and dirty. The operation performed was similar to the last, but a second bone incision was carried down the line of the left coronal suture, at right angles to the first incision. During the operation the pulse became irregular and the breathing hurried, and afterwards there was hyperpyrexia, death ensuing from cardiac failure. Horsley believes that the operation was too extensive, and that the injury thereby inflicted damaged the thermo-taxic centres. He is convinced that operation should be resorted to in all cases of microcephaly and premature synostosis, "as the condition is otherwise absolutely without hope, and interference has evidently secured notable improvement in some cases."

Keen[3] gives us the result of a case which is referred to in the "Medical Annual" for 1892 (p. 132), and adds two other cases of his own. The first case continued to improve up to the date of the last report. The second was a microcephalic idiot, aged one year, subject to occasional eclampsia. A slit, five inches long and a quarter inch wide, was cut in the skull to the left of the middle line. Improvement followed, but was not rapid, and three months later the operation was repeated on the right side—improvement continued. The third case, which was of somewhat similar nature, died from shock about an hour after the operation. Keen has collected some other published cases, giving a total of eight operations with two deaths. Of the six cases

which survived, two—McClintock's and Lannelongue's second case—were reported too early to be of value. In Wyeth's and two of Keen's cases there was slow but steady improvement, and in Lannelongue's first case an extraordinarily rapid improvement.

Prengrueber[4] reports the case of a microcephalic idiot, aged nine. An incision about four and a half inches long and three quarters of an inch wide, was made in the usual position on the skull, and revealed an exostosis on the inner aspect. There resulted instantaneous improvement in cerebration, with great amelioration of other symptoms in the next few days.

Largeau[5] had a similar case. He cut the slit in a horse-shoe shaped form, and bent out the piece of skull thus marked off, so as to fracture the base of it. Seven months later the flap thus made was obviously pushed out, and there was gradual improvement.

Chenieux[6] has two cases. He used the sagittal bone incision in one, and cut along the line of the coronal suture only in the other. In the latter case he repeated the operation on the right side at the end of a year. Both improved greatly.

Parkhill[7] performed the usual sagittal operation on the right side. It is doubtful whether any benefit resulted in this case.

In *chronic hydrocephalus* attempts at the relief of pressure by withdrawal of fluid are, of course, of old date. Karnitsky[8] records five cases of puncture through the anterior fontanelle with a trochar and cannula. The amount of fluid withdrawn at one sitting varied from three to six ounces. There were no bad results, but improvement in the size of the head was temporary only.

Audry[9] reports a case of chronic hydrocephalus following the spontaneous cure (by suppuration) of a spina bifida. He trephined above and behind the external auditory meatus, aspirated the lateral ventricle, and then introduced a horse-hair drain. Death ensued in twelve hours from hyperpyrexia, which Audry explains by Horsley's theory above mentioned. This writer collects five cases, of which all but one died in a few days.

Phocas[10] performed a similar operation, the patient dying from septic meningitis. In a second case by this surgeon, the result was more favourable. The patient, aged twenty-five months, presented a large head, with ossified fontanelles, optic neuritis, nystagmus, inability to walk or to sit up, great restlessness, and retraction of the head. The operation was similar to that described as having been performed by Audry. Cerebro-spinal fluid escaped by the horse-hair drain, and for long after its removal. On the eighth day the patient had lost his restlessness and the retraction of the head, and he could sit up. At the end of four months he could walk.

Broca[11] mentions two cases similarly treated. In one improvement followed the operation, but the ultimate progress of the case is not stated. The other patient died on the fifth day.

The results of trephining for the relief of intra-cranial pressure due to *irremovable tumours*, are illustrated by a case reported by Knapp,[12] of tubercular tumour of the cerebellum, causing occipital headache, double optic neuritis, blindness, anosmia, difficulty of articulation and of swallowing, convulsions and vomiting. Trephining over the region of the right Sylvian fissure was followed by hernia cerebri, with entire relief of pain, the patient living for two months after the operation. The case is of further interest because, although the operation relieved pain, it was undertaken with the object of removing the growth, which was quite wrongly localized. Knapp considers that life was shortened, although pain was relieved. He advises tapping of the lateral ventricles in other similar cases.

The operation of trephining for the relief of intra-cranial pressure in *insanity*, and especially in general paralysis, introduced by F. Claye Shaw, appears to have met with but little enthusiasm. Batty Tuke[13] refers to three cases previously published, and details a fourth. The history of the latter "is much the same as that of all others which have been trephined for the intra-cranial pressure following on 'general paralysis.' So long as fluid can drain there is relief of symptoms, but as soon as the wound heals they return, and the disease runs its course." Hence he holds that we should aim at obtaining permanent drainage; but this cannot be done from the surface of the skull, and we cannot, for anatomical reasons, reach the great cisterns of cerebro-spinal fluid at the base. He therefore advocates lamnectomy of the second or third lumbar vertebra, with drainage of the pial sac by horsehair. Duncan has recently performed this operation for "traumatic injury," removing eight ounces of fluid daily for three weeks, without serious results, and with ultimate recovery. The operation is, of course, based on the theory that the symptoms of general paralysis are due to an active inflammatory exudation, and that the excess of cerebro-spinal fluid here found is not the result of a mere compensatory exudation—a theory which is not by any means universally accepted by pathologists and alienists.

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News," Feb. 17, 1892 ; [8]"Archives of Pediatrics," vol. viii. No. 94 ; [9]Audry, "Le Prog. Med.," Feb. 27, 1892 ; [10]Phocas, "Rev. des Mal. des Enfants," Feb. 1892 ; [11]Broca, "Gaz. Hebdom," 1891, No. 15 ; [12]Knapp, "Jour. of Nerv. and Ment. Dis." Feb., 1892 ; [13]Batty Tuke, "Brit. Med. Jour.," Jan. 16, 1892.

BRIGHT'S DISEASE. *Robert Saundby, M.D., F.R.C.P.*

Dropsy.—An important discussion took place during the past year at a meeting of the Royal Medical and Chirurgical Society, on the extremely interesting and obscure subject of renal dropsy. Dr. Dickinson opened the discussion with a paper, in which he suggested that the dropsy of acute nephritis is due to capillary obstruction favouring increased transudation, that is to say, the pressure in the lymph spaces and venous radicles is diminished and fluid accumulates in the lymph spaces. As the heart hypertrophies it overcomes this obstruction, and dropsy disappears, but on the failure of the heart in the later stages it recurs. The objection to this purely mechanical theory seems to be that if it depended only on the force of the heart the dropsy should appear in the depending parts first, as it does in fact in the late renal dropsy of heart failure, or in ordinary mitral disease, but in acute nephritis the œdema is generally first seen in the face. Sir George Johnson contended that the process was one of active secretion by the epithelium of the vessels brought into action by the accumulation of noxious substances in the blood. Dr. Pye Smith thought it was an inflammatory effusion, the result of active inflammatory changes in the connective tissues affected. Dr. Douglas Powell attributed the effusion to osmosis, but it is not quite clear what he meant by that. Dr. Sansom referred to Wooldridge's experiments, which showed that dropsical transudation could be induced by injecting some lymph product into the circulation. Dr. Haig, whose views were afterwards elaborated in a paper published in the "Lancet," pointed out that his observations had shown that the amount of urinary water stands in inverse proportion to the quantity of uric acid circulating in the blood, and that this is always very high in acute nephritis. The uric acid causes spasm of the muscular arterioles, and shuts off the blood from the renal glomeruli, and he seems to imply that the dropsy resulting is due to the hydræmia. But Cohnheim and Lichtheim have proved that this is not sufficient. Dr. Lazarus Barlow invoked the aid of two factors : (1,) Alteration in the capillary wall from deleterious substances in the blood ; and (2,) Lowered capillary blood pressure from contraction of the arterioles. Cohnheim long ago suggested that there is some change in the capillary walls, and this discussion, though interesting, brought out no new facts, except

the reference to Dr. Wooldridge's experiments, which are perhaps too little known.

Uræmic Fever.—Uræmic conditions are usually associated with low temperatures, but occasionally fever is present, as in a case of contracting kidney recorded by H. Gillet,[1] where the thermometer reached 105·8° before death. There was neither pneumonia nor cerebral hæmorrhage.

The Dyspnœa of advanced Bright's Disease is often called renal asthma, and is generally regarded as a nervous phenomenon caused by the toxæmia, but undoubtedly it is in some instances cardiac in its origin, and Dr. Graham Steele[2] contends for this proposition perhaps too exclusively; but the tratment he recommends—carefully regulated **Low Diet**, frequently repeated **Saline Laxatives**, with **Digitalis** and **Caffein**—is good, and should be borne in mind, as the heart undoubtedly is our sheet anchor, and the means proposed tend to help that organ to overcome the peripheral resistance and to maintain the action of the kidneys.

Morphine in Uræmia.—The value of **Morphine** in certain uræmic conditions is well established, but the indications for its use are not generally known. Dr. H. W. Washburn[3] advocates its use in convulsions, renal asthma, and severe headache. We may add that it is best given hypodermically in small doses (grain ⅙), cautiously administered and its results watched.

REFERENCES.—[1] "Revue de Médecine," 1892, p. 163; [2] "Medical Chronicle," vol. xv., p. 8; [3] "Medical News," July, 1891.

Synopsis.—(Vol. 1892, p. 134.) Seyournet describes a toxic albuminuria of infants treated by **Milk**, or **Milk** and **Lime Water**, gentle aperients, *e.g.*, **Calomel** or **Castor Oil**, **Salicylate of Bismuth** to disinfect bowels, and lumbar massage to relieve renal congestion. Uræmia has been successfully treated by subcutaneous injection of large quantities of **Sterilised Serum**. For chronic anasarca, judicious **Bandaging** and **Rubbing** or **Kneading** the swollen parts.

BROMISM (Treatment of).

Synopsis.—(Vol. 1892, p. 135.) Féré gives β-Naphthol 60 grains, with **Bismuth Salicylate** 30 grains daily, to procure intestinal antisepsis, enabling bromides to be continued and increased even to 200 or 250 grains daily; this also corrects cutaneous disturbances arising during the borax treatment of epilepsy.

BRONCHITIS.

Synopsis.—(Vol 1892, p. 136.) **Acetanilide**, 5 grains at alternate hours, cuts short acute catarrhal bronchitis.

BRONCHO-PNEUMONIA.

Synopsis.—(Vol. 1892, p. 138.) Dr. Hunt applies a very thin layer of **Absorbent Cotton** over the affected side from spine to sternum, securing it with collodion, and repeating this until a good thickness is obtained.

BURNS.

F. S. Eve, F.R.C.S.

In severe and extensive burns the patient frequently rallies from the immediate shock caused by the burn, but dies on the second or third day after the injury.

Mr. William Horrocks argues that death is due to absorption of dead irritant material, which is readily absorbed before the formation of granulations, especially if the escape of discharges is prevented by pressure and dressings. He recommends that in all cases of severe burns the temperature should be taken frequently, and carefully watched. If it rises above 103° F., it has reached a dangerous point. Measures should be at once adopted to check the absorption by submerging the burnt part in a cool bath of some non-poisonous, antiseptic fluid. By this means all the loosened tissue is washed from the injured surface, and any pressure relieved, while the cooling effect of the bath lowers the temperature. In one case (burns of chest and abdomen) so treated with a bath of weak **Sanitas**, which was lowered from 90° to 70° F., in twelve minutes the child's temperature fell from 105° to 102°. The whole appearance of the patient changed ; from being drowsy and stupid he became bright and lively. This change was no doubt partly due to the cooling of the body surface. When the temperature rose a second time, the child was again bathed, with a result that it did not rise again, and the child recovered.

A. E. Maynard advocates the following treatment for burns of the third, fourth, and higher degrees. The wound, when exposed, is washed with a warm solution of 1 in 2,000 **Bichloride of Mercury**, in order more easily to remove any fragments of foreign material, or to impregnate such as remain irremovable. It is then covered with perforated green protective (oiled silk), also steeped in the solution. Over this is placed a piece of boracic lint, wrung out of the same solution, and this again is covered completely by gutta-percha tissue. The whole is enveloped in sublimated Gamgee tissue, and secured with a bandage. This dressing is kept on for two, three, or more days, according to the amount of discharge, which, as soon as it appears through the dressing, necessitates the removal of the latter. When the dressing is renewed, it will frequently be found that the protective and gutta-percha tissue, after being cleansed, can be used again. The protective may sometimes be omitted from the dressing.

REFERENCE.—"Glasgow Med. Jour.," Jan., 1892.

Synopsis.—(Vol. 1892, p. 138.) Bardeleben washes the burnt surface with a 2 or 3 per cent. solution of **Carbolic Acid**, or a 3 per cent. solution of **Salicylic Acid**, then opens blisters, and covers the whole surface with finely powdered **Subnitrate** of **Bismuth** and cotton wool over all; the dressing is renewed when it gets moist. For extensive burns an ointment of Bismuth is substituted for the powder.

CALCULUS (of Bladder). (See "Bladder.")

CALCULUS (of Kidney). (See "Kidney.")

CANCER AND MALIGNANT GROWTHS.

W. H. Elam, F.R.C.S., Eng.

A large moiety of the recent voluminous literature must be apportioned to the consideration of the causes or cause and pathology of cancer in general. For our ideas of the treatment, although founded at present on clinical observation, will be greatly influenced by the theories we may be led to form as to the origin of the morbid processes.

It is a good many years since Thiersch demonstrated that epithelioma had its origin in diseased epithelial elements, and Waldeyer showed that all carcinomata consist of derivatives of epithelial cells.

Before this, Virchow had established the doctrine that all cells come from pre-existing cells, and that any cell—the conditions of nutrition, etc., being equal—can only give origin to its like. Hence a growth (carcinoma) consisting of epithelial structures must be derived from proliferating epithelial cells, and one (sarcoma) consisting of connective-tissue elements must have its parentage in connective tissue cells. As will be seen when the histogenesis of these neoplasms is discussed, something may be said to modify this statement; nevertheless, nothing has been adduced in disproof of the general principle.

Causes of Cancer.—Is it a local expression of a generally diseased condition of the individual, a dyscrasia, or is it in its initial stage an entirely local disease, depending for its development upon changed physiological conditions in the part which is the seat of the disease?

The question of heredity, age, etc., may be postponed for awhile until the two views now most prominently before investigators have been considered, viz., the bacillary origin of cancer, and the causal relationship of injury or chronic inflammation to this disease.

Cohnheim's theory, which certainly is a very fascinating one to the scientific mind, and which refers the causation of tumours to an inclusion of embryonic tissue in the process of development of the individual, may here be only mentioned.

Micro-organisms.—At the present time, all that one can with certainty assert, is that notwithstanding the many experiments by competent observers, the researches made by experienced workers, and our extended knowledge of the *rôle* played by bacteria in disease, neither the parasite of cancer itself, nor any parasitic product, has been conclusively demonstrated.

How Scheurlen discovered bacilli spores in cancer cells, and claimed success in cultivating and injecting portions of diseased mass, removed

from one body to another, is well known. Schill found a double-point-bacillus in the cells of carcinomata and sarcomata of variable size, being larger with carcinoma than sarcoma. Lampiasi found in malignant tumours, and in the blood of those affected, a characteristic bacillus with spores, and succeeded in producing cancer by injecting a culture-product obtained from one case. Domingo, Freire and Rappin express similar views. On the other hand Senger, Ermeugen, Baumgarten, and the pupils of the latter, have failed in every way to satisfy themselves of the existence of a bacillus in a neoplasm which is not in process of degeneration. Ballance and Shattock, although their experiments, conducted over a long period, were only negative, yet concluded that the only theory satisfactorily explaining all the phenomena of malignant growths is the parasitic one.

Pfeiffer, in his monograph "Protozoen als Krankheiterreger," shows that one of the protozoa, viz., the coccidium, may be the parasite of cancer. He has seen epithelial cells containing these bodies in the liver of animals, and also in the bile ducts, where they formed psoro-sperm nodules. He has also seen them in the epithelial cells of cancer. In these infected cells the coccidium grows at the expense of the protoplasm of the cell, and in the neighbouring cells rapid karyo-kinesis is proceding. Malassez, Darier, Michaux and others have also found these bodies in cancer cells. In Paget's disease of the breast, in which carcinoma is preceded by a chronic eczema (?) of the nipple and surrounding part, psorosperms have been found. The disease commences in the skin, and extends along the milk-ducts, and Darier was able to detect these bodies in the epithelial cells, and in the stroma of the cancerous mass, as well as in the lymph vessels. Russell has described organisms which he found in similar relationship with the tissues of cancer, which stain brilliantly, and which have come to be named fuchsin-bodies. These he believed to have a very decided causal relationship with cancer. Russell describes these bodies as multiplying by budding, and he believes them to be related to the yeast plant.

Dr. Sims Woodhead,' in the Morton lecture, states that he has been able to confirm Dr. Russell's observations as regards the "fuchsin bodies," but in specimens specially hardened with bichloride of mercury and alcohol, he was led to believe that these bodies resemble the coccidia more than any other known organism. In the larger bodies—for they are of variable sizes—which appear to have a distinct capsule, there is a distinction between the central portion and the periphery, the former being more deeply stained, at times granular, at times homogeneous, and irregularly mottled with small radiating projections.

Wherever these large organisms are found, small fuchsin-stained bodies can be detected in or near the nucleus of the proliferating epithelial cells, but which are apparently quite distinct from the nucleus. In some cases the nucleus forms a crescent around one end of the fuchsin body, in others it has almost disappeared, but the fuchsin-body is surrounded by a ring of the protoplasm of the epithelial cell containing it.

According to Sudakewitch's observations, the capsule of the body (coccidium) is so thick that its contained protoplasm appears to be little affected by weak, hardening fluids, such as chromic acid or Muller's fluid, and changes may take place in the organism after the protoplasm of the epithelial cell has been fixed by the hardening fluid. By fixing the tissues rapidly with bichloride of mercury, osmic acid, or Fleming's solution, the structure of these organisms is retained in some degree, and may be distinctly shown by staining with logwood, or logwood and saffranin.

Metchnikoff has no doubt the organisms are coccidia. Dr. Armand Ruffer and Mr. Herbert Walker believe they have succeeded in demonstrating the parasite of carcinoma, and that it is a coccidium. According to these observers there is but little difficulty in the process. The pieces (not longer than an eighth of an inch) of a carcinomatous growth are placed, whilst still warm, in the hardening fluid, Fleming's solution being the best. Other solutions were used, viz., solution of corrosive sublimate, absolute alcohol, 1 per cent. solution of osmic acid, and Müller's fluid. With Fleming's solution the pieces were allowed to remain for two or three days, then worked in running water for twenty-four hours, and placed in absolute alcohol for an indefinite period, and when ready to be examined must be saturated with paraffin, according to the Naples method.

For staining, those hardened in Fleming's solution were most successfully treated with a watery solution of methyl-green, and counter-staining with Biondi's reagent, and for those hardened in alcohol the best stain was Biondi's reagent. In any case a nuclear stain and counterstain with aniline dye was successful. The stains used were acid fuchsin, orange, benzo-purpurine, methyl-blue, and violet, rose-bengale, eosin, and those already mentioned.

The parasites were not found in normal tissues, nor in any other than carcinomatous pathological tissues. All endeavours at cultivation failed.

The parasitic bodies consist of a central body or nucleus. Around the nucleus is a mass of protoplasm, which appears to be condensed, and fine delicate rays extend from the centre to the periphery of the

protoplasmic mass. The nucleus takes up the stain much more strongly or differently from the rest of the cell. Scattered through the cell, especially at the periphery, are numerous small dark coloured particles, varying from four to twenty, and sometimes connected with each other by a delicate network. The parasite is surrounded by a distinct double coloured wall, which stains deeply, and is probably formed by the remains of the protoplasm of the epithelial cell. The size of the parasite varies, as also the number of them contained in the epithelial cell. It would seem as if the parasites increase in number in the same capsule, and that the capsule then bursts, and allows a brood, as it were, of young parasites to escape into the body of the epithelial cell, and so into the tissues around. At the same time no parasite has been discovered in the blood of the affected area, or in the connective tissue, or the cells of the blood-vessels or lymphatics. In the liver cells surrounding a secondary growth in this organ no parasite is discoverable. These parasites cannot be epithelial cells invaded by leucocytes, for the latter possess a deeply staining nucleus, are of the small variety, and can be well differentiated both from the parasite and epithelial cell. These leucocytes are found mostly in those epithelial cells containing the parasites, and where the leucocytes and the parasites are together in the containing cell, the parasite gives evidence of degenerative signs, and gradually appears to be penetrated and destroyed by them.[2]

Something may be also said in regard to our ideas of the infectiousness of cancer—if this term may be permitted—being in favour of the parasitic origin of the disease. Many cases have been reported where the disease appeared to spread by contiguity. For example, where disease in the lower lip appears to originate disease in the upper lip at the point of contact, and the same may be said of the tongue and anterior pillar of the fauces, and *vice versa*, the vocal cords, the glans penis and prepuce, the labia majora, etc. In these cases the disease begins in one part and grows in the ordinary manner, the healthy part in contact with it subsequently becoming diseased. Such cases have been reported by Bergmann,[3] Semon and Schattock;[4] also Fenwick's[5] case, in which the two contact surfaces of the bladder were diseased; and many others.

Again, the occurrence at the same time of primary cancer in different parts of the same individual may perhaps favour the idea of this disease being of parasitic origin. Such cases are mentioned by Ubesser, viz., primary flat epithelioma of tongue, and primary cylindrical epithelioma of the jejunum occurring in a man aged sixty-seven; cylindrical epithelioma of pylorus and gelatinous cancer of cæcum, as primary diseases, cancer of both ovaries, and adenoid carcinoma

of uterus occurring simultaneously, and many others.[6] Kaltenbach[7] mentions a primary carcinoma of both Fallopian tubes. Multiple carcinomata are also found commencing in patches of senile seborrhœa, syphilitic sores, and lupus. If it be that the protozoa can only live in the epithelial cells and, by taking up habitation in them, they so stimulate them that the cells proliferate, and rapidly increase in number; then, whatever part of the epithelial surface may be infected by the parasite, will bear the impress of the affected cells, and not the infecting parasite.

Against the theory that carcinoma is caused by micro-organisms, a great deal may be said, and has been said, by capable observers. Russell found his fuchsin bodies in many tissues, physiological and pathological. Other pathologists have variously explained the microscopic character of the bodies said to be coccidia, as being due to different causes, viz., vacuolisation of the epithelial cells, changed leucocytes which have penetrated the body of the epithelial cells, colloid, and other degenerations of the cells, etc.

The great argument against a parasitic theory is, that no attempts at inoculation, ingrafting or injecting of cancer mass or cancer juice, have been successful, notwithstanding all that has been said to the contrary, and the experiments given above.

The direct transition of an epithelial cell into a cancer cell has been observed and demonstrated, and those who most recently have examined cells in which the parasites were present, admit that the cancer cell is a changed epithelial cell, the change being caused by the irritation of these bodies, which have penetrated the cell.

When a metastatic secondary growth exists, this is found to have the same histological characters present in the primary growth. For example, if a growth in the liver secondary to adenoid (cylindrical) carcinoma of the rectum or stomach be examined, it will be found to consist of cylindrical cells, such as do not normally exist in the liver. Unless we are to assume that protozoa have the function of locating themselves in the liver cells, and then transmuting them into cylindrical cells, we must conclude that a greater or less mass of cells has escaped, or been separated from the original growth, and having been translocated to the liver, these cells acquire the power of assimilating nutritive elements, multiplying and reproducing a secondary growth indistinguishable from the primary one. Here it is the cancer-cells, and not the parasite, which causes metastasis, and without this transmigration of cells there could be no secondary growths.

A very forcible fact against the coccidium being the cause of the

cancer, or at least explaining the whole causal relationship between the two, is this, viz., when the disease commences in one kind of epithelial cell, and spreads by continuity of tissue to epithelial cells of another character, the histological character of the growth does not change. If the di ease commences in the flat epithelial cells around the anus, and spreads to the adenoid tissue of the rectum, the growth remains a flat epithelioma, and does not become a mixed epithelioma and adenoid carcinoma. The same holds good when the disease spreads from the œsophagus to the stomach. Why should the parasite penetrate the flat epithelial cell and not the cylindrical cell, or *vice versa*.[8]

The differences existing between the natural history of cancer and that of diseases known to be caused by micro-organisms are at present irreconcilable.

Trauma, Local Irritation, etc. The relationship between trauma, chronic inflammation, prolonged irritation, the reduced resistance of tissues such as is found in scars, etc., and cancer, is now well recognized as an important one. Every surgeon has met with cases in which the origin of the malignant disease appeared due to injury, and when an epithelioma, if not actually caused by, was initiated by irritation, such as a sharp tooth in contact with the tongue. In order that cancer may be developed as a result of the irritation, a condition of things, *i.e.*, a disturbed relationship of the biological conditions of the cells, both intrinsic and in regard to their connexion with surrounding parts, must exist. As man approaches the "cancer age," or when he has attained to this period in life, the relationship of the epithelial cells to the parts beneath is changed in a marked degree. The subepithelial tissue is less in amount and the connective tissue spaces are larger. The columns of epithelial cells are longer and deeper, and show signs of branching, and penetrate further into the widened, connective tissue spaces. There is also a disproportion in the nutritive supply to the cells and the parts beneath. Should this state of things be intensified, as it undoubtedly is, by continued irritation, the epithelial cells extend further into the parts beneath, themselves being penetrated by leucocytes and totally changed in character. There is rapid mitosis, division of nuclei, increased eleidin containing cells, and the cells acquire the power of heteroplasty, that is, of growing and reproducing themselves in other parts of the body, and so forming secondary growths. Why irritation does not cause cancer in all cases we do not know. We only know that there must be in the individual affected, conditions favourable to its development.

There also appears to be some connexion between sarcoma and car-

cinoma in this respect, with this difference, that with the former the injury is severe and a single one, whilst with the latter, it is long continued or frequently repeated[9]. Even if it should be ultimately demonstrated that carcinoma is caused by micro-organisms, it must be assumed that chronic injury must largely enter into the conditions favouring the development of the disease. For it is inconceivable that a coccidium or any other parasitic body could enter an epithelial cell if such cell were in an uninjured condition. Every surgeon is acquainted with cases of psoriasis (ichthyosis, leucoplakia,) of the tongue and buccal mucous membrane, which end in cancer. As a matter of fact every case of leucoplakia is almost sure to end in carcinoma, if the patient live. Men whose occupation subjects them to special forms of irritation of the skin, such as sweeps, workers in paraffin, coal tar, etc., are also subject to cancer.

Volkmann has collected cases in which cancer was the direct consequent of chronic inflammatory processes, viz., ulcers, scars, senile seborrhœa, etc., in ninety-eight men and twenty-nine women, out of a total of one hundred and forty men and sixty-five women[10]. Steiner[11] found in twenty-six cases of tongue-cancer a large proportion with a history of a sharp tooth, psoriasis, or bite of the tongue. Panuel reported ten cases in which a simple ulcer of the tongue became cancerous after the application of caustics.

Schmidt collected thirty cases of carcinoma of the penis, and in twenty-three there had been chronic inflammation as a result of phimosis.

Musser showed that of ninety-eight cases of primary cancer of the bile ducts and gall-bladder, there was a history in a large number of cases of gall-stones having been passed. Of these ninety-eight cases seventy-five were women, and as a very large majority of those who suffer from gall-stones are women, these statistics are confirmatory of the relation between this disease and cancer of the parts irritated and injured[12].

Cancer is not infrequently observed commencing in scar tissue. Rokitansky and Friedlander have observed the commencement of cancer of the stomach in the scar of an old ulcer. In this case, as with cancer of the gall-bladder and bile duct, a large proportion of those affected are women, and when it is remembered, that ulcer of the stomach is much more common with women than with men, there is some ground for expecting that cancer also would be found more frequently with the female sex. Of course, there may be other explanations of the frequency of cancer of the stomach with females as compared with males, than that the cancerous disease commences in the scar of an old ulcer. Numerous cases of carcinoma occurring

in syphilitic and lupus ulcers have been described or reported. As bearing on this point, viz., the influence of irritation or injury in originating cancer, Dr. Unoneau, lecturing on cancer of the œsophagus, shows how the location of the disease in the gullet illustrates this question. The points where there is most likely to be obstruction to the passage of the mass of food, are those at which the disease is almost always found, viz., the upper part of the tube behind the cricoid cartilage where there is a sudden narrowing, again at the point where the gullet passes behind the bifurcation of the trachea, and finally where it enters the opening in the diaphragm. At each one of these places the tube is narrowed, and there must consequently be considerable friction as the bolus of food passes through.[13]

Nothing new has been written in regard to the "constitutional conditions," age, heredity, etc. Nor has anything been advanced in favour of Cohnheim's theory of the origin of neoplasms. Considering the subject with the light of our present knowledge, there can be little doubt that all neoplasms originate from disease of the cells themselves, and if the disease be in the connective tissue cells we get a sarcoma, or other connective tissue tumour; if in the epithelial cells, whether of glands, ducts, mucous membrane, or skin, a carcinoma is produced. The forms of sarcoma and carcinoma have different characters corresponding to conditions not now under consideration.

The disease of the cells cannot at present be given a name to, and must be left for further investigations. The conditions favouring the onset and propagation of this diseased state of the cells have been referred to and are better known.

TREATMENT.—It cannot be said that anything we know as to the etiology of these malignant diseases, aids us in formulating our method of *treatment*, and unfortunately we are at present nearly as far off as ever from reliable remedies. The early and free removal of all neoplasms is the only hope we have of successful results. The *therapeutics* of cancer are not of a character to give much satisfaction, and do not appear to have been of any certain benefit.

The results of treatment by **Electrolysis** are *nil*.

Inoculations with *erysipelas cocci* appear to have given favourable results, but these were not lasting.

Methyl Violet has been advocated as a cure, but the following reports show on what slight grounds.

Professor Severame says he has tried Mosetig von Moorhof's method of injection of methyl violet in twenty-five cases of malignant tumours. In all these cases the diagnosis was verified in Professor Babe's

laboratory. They included cases of ulcerated tumours of the mucous membrane of the mouth, the cheek, the eyelids, the parotid gland, and several of cancer of the uterus. A 1 per cent. watery solution was employed, from 2½ to 12 grammes of this solution being injected every day into the diseased tissue. No untoward effect was observed. Three of the cases were cured; the rest were improved. In cases in which the disease had attacked the bones of the face the method failed, and the knife had to be used. On several occasions it could be seen that the injection brought about a necrobiosis of the elements most deeply stained. Control experiments with distilled water always gave negative results. As regards the mechanism of the method, Nann thinks the methyl violet acts by thrombosis. The healthy tissues are respected and necrobiosis is produced only in the diseased parts. On the other hand, Ortig de la Torre has tried interstitial injections of methyl violet in several cases of malignant tumour. In a case of epithelioma of very chronic course, the discharge was at first diminished, but within a few days of the commencement of the treatment the ulcer spread to twice its former size. In a case of cancroid of the nostril, which had lasted twelve years, the injections caused violent local inflammation. This, however, had no effect whatever on the disease, and after a week the treatment was given up. In a case of cancer of the face, and in another of malignant disease of the shoulder, the injections were equally useless.

Professor Bobroff[14] relates two cases of epithelioma of the lower lip in peasant men who declined any surgical interference, and who were treated with parenchymatous injections of a 2 per cent. solution of blue pyoktanin. In both, the injections induced softening of the neoplasm, formation of small abscesses, disintegration and elimination of nodules, and consecutive shrinking of the tumour with cicatrization. Professor V. J. Küzmin, of Moscow, tried methyl violet in two inoperable cases, in one of which he had to deal with recurrent medullary cancer of the cervical lymphatic glands (developing in three months after the removal of the tongue on account of the disease), and in the other with recurrent carcinoma of the hyo-maxillary triangle, and maxillary and parotid regions. In both of the cases there was observed partial softening, suppuration, and disintegration, but on the whole the morbid process continued to steadily spread ever further.

Professor N. V. Sklifosovsky similarly mentions two cases of melanotic sarcoma, in which the neoplasms continued to actively grow in spite of the pyoktanin injections. Dr. J. D. Sarytcheff[15] also failed to check the progress of malignant disease in two cases, both of them being those of women with recurrent cancer.

REFERENCES.—[1] "Lancet," May 7, 1892; [2] "British Med. Journ.," July 16, 1892; [3] "Deut. med. Woch.," xiii., 45; [4] Brit. Med. Jour.," April 20, 1892; [5] "Trans. Path. Soc.," 1888; [6] Lohlein, "Deut. med. Woch.," xv., 25; [7] l.c., 1889; [8] Raymond, "Gaz., des. Hop.," 105, Hanser Das cylinder epithel carcinoma, 1890; [9] Schuchardt, "Klin. Vort.," No. 275; [10] "Klin. Vort.," Nos. 234-5; [11] "Beit., f. klin. Chir.," vi. 3; [12] "Boston Med. and Surg. Jour.," Dec. 15, 1889; [13] "Lancet," vol. 1, p. 7, 1892; [14] "Rév. de Chir.," May 10, 1892; [15] "Annals of Surgery," July, 1892.

CANCER (Uterine). *Wm. J. Smyly, M.D., F.R.C.P.* *John H. Glenn, M.D., B.Ch.*

G. Winter, in "Berliner klin. Wochenschrift," upon the early diagnosis of cancer of the uterus, states that a large compilation of recent statistics, as presented by Olshausen, Schauta, Fritsch, Kaltenbach, and Leopold, has proved that among four hundred and seventy-four total extirpations of the uterus, the mortality was 8·4 per cent. The supra-vaginal amputation yields still more favourable results. In the Berlin Gynæcological Clinic there were one hundred and fifty-five operations and ten deaths, *i.e.*, 6·5 per cent. mortality, and of the last sixty-five supra-vaginal there was not a single death. It is very encouraging that the number of cases of operation is increasing from year to year, although far too many are seen at a time when it is too late to operate successfully.

Winter strongly appeals to physicians to examine all cases in which there is the least suspicion from the symptoms, to ascertain whether there is carcinoma, as only in this way can the diagnosis of the disease be made at the earliest stages of the malady. For the guidance of the practising physician he calls special attention to the abundant watery discharge from the vagina, particularly in carcinoma of the portio vaginalis, the profuse menorrhagia, as well as the bleeding during coitus. Pain is one of the rarest symptoms of commencing carcinoma.

Injection of Absolute Alcohol in Cancer of the Cervix Uteri.—Dr. Heinrich Schultz speaks in glowing terms of this method of treatment. The patient having been placed in Sims' position, and the urethra protected with cotton, absolute alcohol is injected with a syringe; 5 to 10 ccm. are injected every day.

REFERENCE.—"Centralbl. für Gynæcologie."

Synopsis.—(Vol. 1892, p. 145.) Mosetig has greatly reduced malignant tumours by injections of 1 in 300 Merck's Pyoktanin. Dyer found a solution of 3 to 10 grains of Fuchsin in 4 ounces of Alcohol to give good palliative results in some malignant ulcers. Poucel has successfully injected Corrosive Sublimate 1 in 1000 into cancerous tumours, using six injections, each about half an ordinary hypodermic syringeful, and repeating the treatment in eight days.

CATARACT.

William Lang, F.R.C.S.

The importance of carrying out in minute detail antiseptic cleanliness in all cases of cataract extraction is, Professor Haab says, the only way to avoid suppuration. He, therefore, washes the tear passage through with a syringe in all cases, and often finds an obstruction where none was suspected. When an obstruction is found, he continues the syringing with a 1 in 1000 solution of **Mercury** for several days, and on the day before the operation closes both canaliculi by passing the wire of the galvano-cautery into the canaliculi, for a distance of five millimètres, and then cauterizing them. He has never had any bad results since adopting this treatment. Snellen instils a drop of a 5 per cent. solution of **Cocaine** made with a 3 per cent. of **Boric Acid** into the conjunctival sac; he then injects with a hypodermic syringe a few drops of the same solution beneath the conjunctiva at the point where the section will terminate. The œdema produced by the injection facilitates the making of a conjunctival flap, which Snellen thinks is of the greatest importance, as it prevents secondary infection of the wound by ensuring its immediate union.

The assistant raises the upper lid by means of a retractor, held in the right hand, whilst with the left fore-finger he depresses the lower lid. Snellen prefers this to the employment of a speculum. Immediately before the operation he instils a little pilocarpine solution to avoid prolapse of the iris. With a narrow Graefe's knife he makes the puncture and counter puncture in the corneal margin, and as soon as the aqueous begins to escape, the corneal flap is cut upward with the blade. By this manœuvre, wounding the iris can be avoided even in a shallow anterior chamber. Whilst finishing the section the edge of the knife is turned a little backward so as to cut a conjunctival flap. An iridectomy is only performed in atrophic cataracts where the lens is extracted in its capsule, in all other cases without iridectomy, even those complicated with leucoma, staphyloma or partial detachment of the retina.

The capsule is opened by a long horizontal section which extends even behind the iris. The lens is made to tilt forward by a spatula which is at first pressed backwards against the lower part of the cornea. Cortical masses are evacuated with great care, but he never irrigates the anterior chamber, and if there is any difficulty he waits until the anterior chamber is reformed, to facilitate their removal.

The dressing consists of absorbent wool, dipped in a 1 in 5000 **Perchloride of Mercury** solution, which is packed carefully into the orbital depressions, and then covered with a piece of impermeable

protective, the whole being held in position by three pieces of plaister. The unoperated eye is left without any covering, and the patient's room is not darkened.

The lachrymal canals are washed out with a 1 in 5000 perchloride of mercury solution, and the lids cleaned with the same before the operation. The instruments are cleaned with absolute alcohol, and immediately before being used are dipped in the mercury solution. Snellen has also had the walls and ceiling of his operating room painted a dark grey colour, in order to avoid the corneal reflections which interfere with the operator.

Congenital Cataract.—Dor recommends that no operation should be performed, as a general rule, when the diameter of the opaque zone in lamellar cataracts does not exceed five millimètres, and, especially if the vision can be raised by glasses, to half the normal, when the pupil is dilated. Under such circumstances a small iridectomy may be made which should not extend up to the root of the iris. This may be accomplished either by using Liebrich's forceps or Tyrell's hook to withdraw the iris through a small corneal section.

When an operation is decided upon, the age of the patient determines its nature. Up to the age of ten, discission alone, repeated as often as is necessary, suffices. From ten to twenty, discission followed by linear extraction. After the age of twenty, discission followed by ordinary extraction, with or without iridectomy upwards. When the cataract is shrivelled up, *arido-siliquata*, it must be extracted with forceps. Other forms of complete cataract must be treated as early as possible, and in the same way as lamellar.

The present writer's treatment differs in some respects from this. First, he would recommend that no operation should be done for any form of lamellar cataract until the child had been taught to read, or, at least, until an attempt to teach him had been made.

His reason for this is founded on a case in which he operated on one eye for what appeared to be a very dense and large lamellar cataract. Before operating on the other eye the child learnt to read, and on being tested it was found that the vision with this eye was $\frac{6}{12}$ and J 2. How this was obtained remains unexplained, for no fundus details could be seen through the cataract.

After discission an eye may remain quiet without any inflammatory reaction, and the lens slowly absorb, or the congestion and increased tension will necessitate a speedy evacuation of the swollen lens matter. If there is no tendency for the broken-up lens matter to escape through a linear incision, when a spoon is introduced into the

section, the writer finds that suction with a Bowman's syringe is a much better plan for evacuating the lens than any other method ; and this can be carried out in patients up to the thirtieth year, or even the forty-eighth, as occurred on one occasion, through a mistake being made in the patient's age. When the cataract is complete, discission previous to the linear section is not necessary to facilitate the evacuation of the lens, either with the scoop or by the suction syringe.

Finally, the section should never be near the sclero-corneal junction, so that in case of the iris becoming involved in the wound, it may be readily divided by Lang's anterior synechia knife.

Where the pupil will not dilate, as fairly often happens in congenital cataracts, and more especially in the shrunken form, the writer seizes as large a piece of capsule as is possible with a pair of Liebrich's forceps, which are passed through the pupil and then opened as wide as may be found convenient. When the lens capsule, either as a whole or in part, has been removed in this manner, he has found that the pupil will dilate. This plan is much better than attempting an iridectomy, a most unsatisfactory operation in a very young child.

CEREBRAL ATROPHY. *Henry Dwight Chapin, M.D., New York.*

Dr. M. Allen Starr reaches the following conclusions regarding the cerebral atrophies of childhood : (1,) Hemiplegia, sensory defects and imbecility occurring with or without epilepsy in children are chronic diseases incurable by medical treatment. Any means which may be legitimately used to save the individual from a life of invalidism is to be employed ; (2,) The pathological conditions producing these symptoms may be either gross defects and atrophies of the brain or an arrest of development in the cerebral cells without any change which is apparent to the naked eye ; (3,) It is at present impossible to determine absolutely the pathological condition present in any given case without an exploratory operation ; (4,) Such operations are not without danger, but if caution is used in opening the dura, and if the operation is made as short as possible, the dangers are avoided ; (5), When manifest atrophies are present the operation will not produce any result. When the condition is one of arrested development of cerebral tissue it may prove of service. When clots, cysts, or tumours are found and removed the chance of recovery is increased. When the skull is markedly microcephalic from early union of the sutures the increased space given to the brain by the operation appears to stimulate its growth and development; (6,) Epileptic attacks are frequently reduced in frequency and modified in character by craniotomy. When the opening of the skull remains covered only by the soft tissues it appears to act as a safety-valve, allowing changes in the intra-

cranial contents to occur without producing pressure upon the brain, (7,) While hemiplegia, aphasia, athetosis and sensory defects have been relieved by operation, it is as yet impossible to predict to what extent imbecility may be relieved; (8,) Reports of cases should be made in full and not within six months of the time of operation, as conclusions cannot be reliable unless reached from long observation.

REFERENCE.—"Med. Record," 1892, xli., p. 85.

CHILBLAINS.

Synopsis.—(Vol. 1892, p. 146.) R Ac. Carbolici, ʒj; Ac. Tannici, ʒj; Tinc. Iodini, ʒj; Cerat. Simplicis ʒiv. M. Ft. Ung. Sig.—Apply two or three times daily.

CHOLERA.

[There is a very wide divergence of opinion, both on the subject of the treatment of cholera, and concerning the measures best calculated to prevent the spread of an epidemic. This may, to a large extent, be accounted for by the differences exhibited by the character of epidemics, and it appeared to us better, instead of leaving this article in the hands of a single writer, to ask those who have watched the recent epidemics in various countries to supply us with some notes of the practical results obtained. Sir George Johnson's views on cholera are not new, but they have been so generally misinterpreted, that we are glad to have the opportunity of presenting a brief abstract of them, especially as they have been to a large extent confirmed by recent experience. We are only able to find room for a small portion of Dr. Mitra's able and exhaustive Report.—*Ed.*]

How is Cholera Propagated?—Dr. R. Thorne Thorne, Medical Officer of the Local Government Board, expresses the following opinions in a recent official circular:—

Cholera in England shows itself so little contagious, in the sense in which small-pox and scarlatina are commonly called contagious, that, if reasonable care be taken where it is present, there is almost no risk that the disease will spread to persons who nurse and otherwise closely attend upon the sick. But cholera has a certain peculiar infectiveness of its own, which, *where local conditions assist*, can operate with terrible force, and at considerable distances from the sick. It is characteristic of cholera (and as much so of the slight cases where diarrhœa is the only symptom as of the disease in its more developed and alarming forms) that *the matters which the patient discharges from his stomach and bowels are infective.* Probably, under ordinary circumstances, the patient has no power of infecting other persons except by means of these discharges; nor any power of infecting even by them except in so far as these matters are

enabled to taint the food, water, or air, which people consume. Thus, when a case of cholera is imported into any place, the disease is not likely to spread, unless in proportion as it finds, locally open to it, certain facilities for spreading by *indirect infection*.

The dangers which have to be guarded against as favouring the spread of cholera-infection are particularly two. First, and above all, there is the danger of WATER SUPPLIES which are in any (even the slightest) degree tainted by house refuse or other like kind of filth—as where there is outflow, leakage or filtration from sewers, house-drains, privies, cesspools, foul ditches or the like, into springs, streams, wells or reservoirs, from which the supply of water is drawn, or into the soil in which the wells are situate—a danger which may exist on a small scale (but perhaps often repeated in the same district) at the pump or dip-well of a private house, or on a large or even vast scale, in the case of public water-works. And secondly, there is the danger of breathing AIR which is foul with effluvia from the same sorts of impurity.

A. Mitra, L.R.C.P.

Does Quarantine check the Spread of Cholera?—During the European epidemic of 1831, "every available means was employed to surround the city of St. Petersburg by a sanitary cordon, the whole power of the Emperor being exerted to prevent persons from entering the capital, but without the slightest effect. At its appointed time the disease was generated throughout the city, and continued its work of destruction during the months of July and August."

"Again, during the same epidemic in Spain, quarantine was most rigorously enforced: every traveller from an infected district was subjected to the performance of quarantine, and if he entered Spain without having gone through the formality, he was liable to be punished with death, his apparel burnt, and goods seized, the same punishment being extended to those who received him. In spite of all these precautions cholera raged with great violence in many of the provinces of Spain during the summers of 1833 and 1834."

During the same epidemic, Debrezyan, in Hungary, although guarded by a triple cordon ("Liverpool Medical Gazette," vol. i., p. 277), suffered more than any other town in the country.

But to prevent, however, the possibility of introducing cholera outside Kashmir into the Jammu districts, a post of observation was opened early, and maintained throughout the epidemic, to examine travellers before they were allowed to cross the Banahal Pass. Similar posts of observation were also opened at Baramula and at Uri on the Jhelum Valley road. There is no doubt that such posts of obser-

vation are very useful in providing ready medical help for travellers: what I consider useless is the enforcement of extreme and vexatious rules of quarantine, such as was once done in the continent of Europe by subjecting a wagon containing disinfectant powder of carbolate of lime to quarantine detention.

Surgeon-general Cunningham, in his work "Cholera: what can the State do to prevent it?" gives the official opinion on the subject of prevention of cholera by quarantine regulations. He says, "In India, experience has shown that all attempts to keep out cholera by means of quarantine have entirely failed. Quarantine has been tried again and again to protect a cantonment, and not one single instance can be cited in proof of its success. . . .

The feeling of the people is that they would rather face all the dangers of cholera than be subjected to quarantine interference, and any one who knows the circumstances can fully sympathize with them in this feeling.

So satisfied has the government been of the futility of quarantine to do any good, and of its power to do evil, that quarantine in India has been altogether prohibited.

"The next point to be observed is that in both Europe and America quarantines and cordons have entirely failed to afford the smallest protection. Of this there has been abundant evidence times without number, in Russia, Sweden, France, Spain, Italy, Gibraltar, Malta, Egypt, the United States, and other countries."

The following paragraph, which appeared in the "Lancet," June 11th, 1892, shows the latest medical opinion on this subject: "Cholera appears to be still raging at Meshed, more than a hundred deaths occurring every day. The latest news is that the disease has appeared amongst the English camp in the hills, and that "*cordons sanitaires*" are being formed to arrest the movement of pilgrims. We had hoped, that the last had been heard of this antiquated mode of warfare against disease, and that the time consumed in forming *cordons* might have been more usefully employed in the direction of an improved system of sanitary defence."

[This briefly expresses the views of the opponents of quarantine regulations, and it appears to us unnecessary to insert the statements we have received from other eminent authorities, whose views are of great weight, but which only recapitulate the above opinions. We have asked Mr. N. C. Macnamara, whose researches on the origin and spread of cholera have had so much practical effect in determining the action of European governments, and lately that of the United States, in adopting quarantine regulations, to state the other side of the question.—*Ed.*]

N. C. Macnamara, F.R.C.S.

Before replying to this question, it is necessary to understand what we mean by quarantine. On referring to Webster's English Dictionary, I find that he defines quarantine to be, "*A period of time, variable in length, during which a ship or vessel supposed to be infected with certain diseases, is not allowed to communicate freely with the shore.*" This is the sense in which the term was employed by the delegates at the International Sanitary Congress of 1874, and 1892. In the report drawn up by the former assembly of public health authorities, we find, under the second section, rules and regulations appertaining to "questions relating to quarantine." The first rule under this head refers to the medical examination of vessels arriving from infected places, and detailing the powers of medical officers of health, either to grant the vessel free pratique, or to detain and isolate her and all on board from communication with the shore. If, during the voyage, or after arrival in port, cases of Asiatic cholera have occurred, the vessel is not only to be isolated, but her "crew and passengers, after the removal of the sick and dead, are to undergo a careful process of cleansing and disinfection, under the supervision of the sanitary officer." Rule iii. directs that in any vessels in which cases of Asiatic cholera have occurred, healthy individuals and all their effects are, at the discretion of the medical officer, to be disinfected, upon the plans laid down by the Local Government Board. The absolute and complete isolation of the sick is insisted on, and means are to be taken to remove them from the vessel to hospitals provided for their special care and treatment.

A committee of delegates of the Sanitary Congress was appointed to draw up regulations regarding "the quarantine *establishments* in those states which intended to erect such." It is obvious that the sanitary authorities attending the Congress of 1874, and again in 1892, clearly recognized the fact, that there was a difference between quarantine regulations and a system of quarantine establishments; the latter entails lazarettos and the crowding of all suspected people into confined and often small spaces—it means the complete cessation of free intercourse between a country where cholera exists and unaffected places. The Right Hon. H. H. Fowler, President of the Local Government Board, it seems to me, is therefore inaccurate when he states that quarantine "has never been resorted to in this country since 1848," for its regulations are in force at the present time; but we have no quarantine establishments.

Our quarantine regulations, as now administered, result from the precise knowledge we have obtained as to the cause of Asiatic

cholera, and of the means by which it is disseminated. Knowing this, we are, thanks to the officers of the Local Government Board and our public health service, largely able to protect our people from the introduction of cholera germs into their midst. Our health officers, however, are but human beings, and cannot absolutely protect us against the importation of cholera germs into our crowded and dirty cities. Nevertheless, if the bacillus finds a visiting place in England, I believe that medical men throughout the country will, acting under the principles of preventive medicine which they have now mastered, keep the disease under control, by isolating the sick, and in every case destroying the bacillus by disinfectants immediately it has passed with the discharges from the bodies of patients under their care.

Under quarantine regulations, such as those laid down by the members of the International Sanitary Conference of 1874, although twenty-nine cases of Asiatic cholera have been brought to our shores from infected places during the past summer, no case has arisen from any one of these imported cases, although, as Mr. Fowler justly observes, any one of these patients, if allowed to land in London, Newcastle, or other sea-port towns, unless they had been isolated and properly treated, might have been the source of an outbreak of epidemic cholera.

There is a small body of influential English medical men who do not admit that we know what the cause of cholera is, or the means by which it is disseminated from India over the world. These gentlemen would discard quarantine regulations as useless, and the principles upon which it is founded as futile. I cannot concur in these opinions. I believe quarantine regulations are a necessary part of the effective preventive treatment of Asiatic cholera, and it is a better word, in my opinion, to employ when we refer to such regulations than the term, "medical-inspection-and-hospital-isolation"; quarantine regulations include this and much more that is essential in warding off, or in controlling an outburst of epidemic cholera, either in England or any other country.

Sir George Johnson, M.D., F.R.S.

General Treatment.—The theory that the worst symptoms of cholera are due to an excessive drain of fluid from the tissues, had its origin some sixty years ago, when cholera first invaded Europe.

Notwithstanding the fact that there is no direct relation between the degree of collapse and the amount of discharges, the most deadly cases being those in which the gastro-intestinal discharges are either absent or very scanty, the erroneous dehydration theory rapidly

gained almost universal acceptance, and from it resulted a repressive treatment by opium and astringents, the adoption of which led to a marked increase in the number of deaths from cholera in India. Prior to this period, opium was used by Indian physicians to relieve the painful cramps, but at the same time, purgatives, and even drastic purgatives, were given to remove the morbid secretions.

The success of these early practitioners excited the wonder of Dr. Edmund Parkes, who says : "I cannot account for the astonishing success which attended the practice of several gentlemen in the earlier periods in India." (Researches on the Pathology of Asiatic or Algid Cholera, p. 195.

It does not appear to have occurred to Dr. Parkes that his comparatively unfavourable results might be due to the different operation of purgatives given to remove offensive secretions, and opiates, employed with the object of preventing their escape, the latter being the practice which he adopted.

I had ample opportunities of studying the results of the two methods of treatment, before I had formed any theory as to the nature of the disease, and I was impressed with the unfavourable results of the repressive treatment before the source of danger had made itself clear to me.

After a careful examination of all the phenomena of cholera I arrived at the conclusion that the essential cause of the symptoms of collapse is the obstruction of the circulation through the lungs. When the body is examined soon after death in the stage of collapse the right aorta of the heart—the pulmonary artery—and the large systemic veins, are obstructed with blood, whilst the left aorta of the heart is nearly empty. The explanation is that the poisoned blood excites a contraction of the pulmonary arterioles, the supply of oxygen to the system is diminished in proportion to the defective current of arterial blood, so that both the blood and tissues become deoxygenated, there is a diminished elimination of carbonic acid, and nearly a complete suppression of bile and urine. That these symptoms are due to defective oxidation is rendered more probable from the fact that if a nursing mother becomes the subject of cholera and falls into collapse, the secretion of milk continues apparently unchecked, and the breasts become painfully distended. The chief ingredients of milk—curd, sugar, oil, and water—unlike those of bile and urine, may be obtained from unoxygenized blood ; therefore, the secretion of milk continues while the oxidised secretions are more or less completely suppressed.

The prevalent idea that the dark and treacly condition of the blood

in cholera collapse is mainly a result of its watery part having escaped through the stomach and bowels, is an erroneous inference from an incomplete observation of facts. A mere drain of liquid by vomiting and purging does not thicken the blood, and for a very obvious reason. The soft tissues of the body contain four-fifths by weight of water, and when water is drained off by the bowels, water at the same time is absorbed by the capillaries of the various tissues, and passes into the veins, so that the volume and the liquidity of the blood are maintained by this compensatory absorption, while the weight of the viscera, especially that of the kidneys and the spleen, is diminished in proportion to the amount of liquid which they have given up to the blood during the diarrhœa stage.

So rapid is the absorption of water when the contents of the vessels are escaping, that the blood which flows from a vein at the end of the operation of venesection is more watery, and therefore of lower specific gravity, than that which escapes when the vein is first opened. Then, on the other hand, a dark and thickened condition of blood is not peculiar to cholera, but it occurs in all forms of disease in which respiration and circulation are simultaneously impeded.

The marvellous temporary relief which follows the injection of a hot saline liquid into the veins receives a ready explanation. The liquid, mingling with the poisoned blood in the pulmonary artery, dilutes it, and so renders it less irritating to the vessels, while by its warmth it relaxes the arterial spasm, and thus allows the blood to flow on. It has been found that if by any means the body can be thoroughly warmed, whether by immersion in a hot bath, or by packing in a hot wet sheet and blankets, not only are the painful cramps of the voluntary muscles relieved, but the arterial spasm in the lungs appears also to be relaxed by the warmth of the returning venous blood ; for the circulation becomes more free, and the arterial pulse at the wrist increases in volume and in power. In contrast with this, if a patient suffering from any of the ordinary forms of exhaustion were placed in a hot bath, the result would be very different ; the heart's action would be enfeebled, a large quantity of blood would be diverted to the surface of the body in consequence of the relaxing effect of warmth upon the superficial arteries, faintness would be speedily induced, and the pulse would become extremely feeble, or even cease to be felt.

The above considerations, apart from the comparative results of the two methods of treatment, some of which I have given in an article on the "Therapeutics of Cholera ("Lancet," Oct. 22, 1892), prove that we *should not attempt by opiates or other repressive means to*

arrest a diarrhœa while there is reason to believe that the bowel contains a considerable amount of morbid and offensive materials.

The result of the administration of opium by the mouth would be more frequently and decidedly injurious than it is, were it not that the outward flux of liquid from the blood impedes the absorption of the drug, and the diarrhœa continues in spite of repeated doses of opium, for a period varying from a few hours to several days. In such cases, the curative efforts of nature eject the morbid poison from the blood and bowel, together with the drug, by which an attempt is made to arrest the elimination. On this point Dr. Koch's experience is peculiarly suggestive. His attempts to produce cholera in Guinea-pigs failed until, at the time he introduced the poison into the stomach, he injected a dose of tincture of opium into the peritoneal cavity. His object was "*to render it possible for the cholera bacillus to remain longer and gain a footing in the intestine.*"

Is it not obvious that those who endeavour to arrest the discharges by opium are repeating upon the human subject the lethal experiments which Koch and others have performed upon guinea-pigs? There is an idea very prevalent among members of the profession that my treatment of cholera consists in giving castor oil, and that under no circumstances do I give opium.

In some directions which I have given in the chapter on cholera in my Medical Lectures and Essays (Churchill, 1887,) I recommend the use of simple diluent liquids, such as water, cold or tepid, toast water, barley water, or weak tea. These, the patient should be allowed to drink copiously. I suggest the use of some safe purgative as a means of accelerating the recovery, by sweeping the morbid secretions from the intestine, and I recommend **Castor Oil**, because, notwithstanding its unpleasant taste, it is the safest and best purgative. If the dose be vomited I recommend its immediate repetition, the patient lying still and taking no more fluids for half-an-hour.

If there is difficulty in the retention of castor oil, I employ **Rhubarb** or **Gregory's Powder** in its place, and when there is decided hepatic derangement or frequent vomiting, I combine with this 2 or 3 grains of **Calomel.**

When the *diarrhœa* has continued for some hours, the stools being copious and liquid, and there is an absence of colic and abdominal distention a dose of **Opium** may be given. From 5 to 10 drops of the tincture in water is usually sufficient.

While there are some cases in which the evacuant dose is not required, even at the commencement of the attack, there are many more in which the opium is unnecessary at the later stage. In such

cases a little brandy mixed with arrowroot is sufficient, both to support the patient and soothe the irritation of the intestines. In some cases of *severe and prolonged diarrhœa*, it may be necessary to repeat the oil and the laudanum alternately more than once, at intervals of three or four hours. It is by practical skill and tact that these cases can be discriminated.

Hot fomentations or hot sand bags should be applied to the feet and legs, especially during the cold stage.

Cramps of the muscles may be relieved by the use of friction with the warm hand.

For cases where the *collapse* is extreme I order the patient to drink freely of hot water, care being taken that the stomach is not over distended. Hot air or water baths, although they afford some temporary relief to the cramps, and improvement of the circulation, have proved, on the whole, more exhausting and distressing than beneficial.

A mixture, containing 5 grains of **Sesqui-carbonate of Ammonia** in each dose, or a teaspoonful of **Sal-volatile** forms an excellent diffusible stimulant, which may be administered every two or three hours.

Bleeding from the bowel, contra-indicates the use of castor oil; in such cases, 20 drops of **Oil of Turpentine** in mucilage, should be given every two hours, and iced water taken freely by the mouth.

Hot saline injections, which have been so largely used in the recent Hamburg epidemic, were strongly recommended for cases of extreme collapse, in the lectures to which I have previously referred.

In respect to *food*, it is worse than useless to feed a patient during the stage of collapse, it merely causes distress. After reaction has occurred and the normal secretions are restored, the mildest nourishment should be given frequently, and in small quantities. Milk, gruel, rice, or arrowroot, with a small quantity of brandy, soup, or beef tea, or chicken broth. The power to digest solid food may be long before it returns after an attack of cholera, and this indicates care in the choice of foods, while tone to the mucous membranes may be restored by the use of quinine (gr. j.) with dilute hydrochloric or sulphuric acid (♏x. to xv.) taken with the meals.

For the *febrile condition* which frequently accompanies the reaction after collapse, scanty liquid diet should be given, *without alcohol*, copious diluent drinks, saline aperients, and counter-irritation over the lungs and kidneys, if these organs are congested.

The method of treating cholera which I recommend, is not a mere system of drug giving, but a definite plan based upon a careful study of the natural history of the disease. For its full success it is necessary

that the practitioner should have that confidence in the method, without which it can never be fairly tried, and he should be able to inspire his assistants and, above all, his patients, with the same confidence and trust.

CHOLERA IN HAMBURG, 1892. *F. Reiche, M.D., Hamburg.*

Medical Treatment of Cholera in Hamburg, 1892.—It is at present impossible to give a final judgment on the extent and value of the therapeutic experiments and efforts made during the late cholera epidemic in Hamburg, as our hospital statistics, embracing many thousands of observations, are only now approaching their completion. The following is therefore merely a brief account of the principal experiences relating to it.

We know that every widespread cholera epidemic displays in the main its own characteristic features. In spite of great diversity in the appearance of the individual cases, we see in each a preponderance of definite "course-types," and we can therefore describe differences in the form of various epidemics. Thus, we recognize and describe some epidemics as mild, others as severe, others again as very severe; we recognize some, where, along with great depression of skin-temperature a rectal fever-temperature of 39° C. (102° F.) is shown; while in the epidemic just gone by, this symptom was never found by me, nor so far as I know by others, notwithstanding many investigations specially directed to the point. But sometimes we come across differences in yet other respects, which, apart from their great clinical and epidemiological interest, deserve consideration from a therapeutic point of view. Thus the Hamburg epidemic of 1892 appears particularly unfavourable for therapeutic results; accordingly, many of our present observations must be judged from this point of view.

Cantani ("Berl. klin. Woch.," 1892, No. 37) mentions an important difference in the character of epidemics, namely, that in certain of them the chief danger lies, in the majority of cases, in the extreme inspissation of the blood, brought about by profuse evacuations; whereas in others there is a far greater preponderance of cases in which the rapid supervention of asphyxia and the "algide stage" lead to fatal collapse, even before the blood is thickened. Consequently, the symptoms of acute poisoning are most prominent.—Further, in the majority of all epidemics, we consider the premonitory diarrhœa as the first stage of the severe choleraic attack; at other times this may be wanting, and the illness sets in acutely and immediately.

It was this last symptom which characterized our epidemic, and especially at its commencement when, within a short time, thousands throughout the whole city were taken ill. The patients, often while

busy about their daily work, were seized without a warning note, and the first appearance of illness was accompanied by complete collapse.

Hence, reviewing the many hundreds of cases that I have seen, I must class by far the greater number with the second group of cases mentioned by Cantani. Taking due note of their general character, and further, of the copiousness of their evacuations, as well as of the nature of the blood which issued during the intravenous injections, the patients were evidently suffering from acute chemical poisoning, while inspissation of the blood occurred much less often as a prominent and most significant condition.

What I have just said justifies my statement as to the unfavourableness of this epidemic from a therapeutic standpoint. On the one hand we only occasionally saw the stage in which we recognize the life-saving importance of medical interference, and of the intestinal injections of **Tannin**, recommended by Cantani and his followers; but while we are convinced theoretically of the efficacy of many remedial measures, we could expect very little from them in a well-marked attack of the disease. On the other hand, even from **Transfusion,** the most powerful of all symptomatic measures in cholera, we could not expect quite so much as observers of other epidemics, since the thickening of the blood was quite secondary to intoxication of the organism by the metabolic products of the comma bacillus. Thus the addition of water did not fulfil primarily an *indicatio causalis*, but by diluting the poison reduced its harmful effects.

Before we pass on to a discussion of the individual therapeutic measures, yet another circumstance must be borne in mind. We observed in this epidemic, comparatively frequently, slight gastro-intestinal disturbances, often of the briefest duration, which, according to clinical and bacteriological experience, are ætiologically choleraic. Only occasionally are they recorded in tables and statistics, and they were seldom taken to the hospitals. As before mentioned, cases showing a transition from these slight forms into those of severer course were very infrequent. These spontaneously cured cases, or cured by indifferent means, teach us how very cautious we must ever be in estimating the results of medical measures in the cutting short of an expected attack of cholera.

Of course, from the nature of the case, such cholera-diarrhœa, even in its mildest appearance, demands the special attention of the physician. In the hospitals intestinal injections were generally employed to meet it, and always with immediate effect; or an astringent or antiseptic—**Tannic Acid, Bismuth, Salol, Calomel**—was given, after a previous dose of **Castor Oil.**

In the moderate cases, which multiplied as the epidemic declined, very noticeable curative effects were observed from the use of intestinal injections of tannic acid, mostly 2 per cent. solutions, the improvement setting in with a lessening of the profuse and painful stools (cf. Eisenlohr, "Deutsch. med. Woch.," 1892, No. 44). The algide stage could not always be kept back by these means. As regards medicines, we made trial of salol. less often of bismuth subnitrate and **Salicylic Acid** or **Pyoktanin,** but most frequently of calomel (cf. Rumpf, "Deutsch. med. Woch.," 1892, No. 39), which in a few decigram. (1½ gr.) doses or in repeated doses of 1 centigram. (⅙—⅐ gr.), often worked satisfactorily—the strength of the dose making it clear that this was probably due to its disinfecting and bactericidal properties. With none of these remedies was any specific action discovered. Opium administered by the mouth in *sedative* doses had a decidedly *unfavourable* influence. It was wholly condemned, except for subcutaneous administration in small doses of an aqueous solution (Dr. Wall, London), when it sometimes seemed to act remarkably favourably.

In treating the severe cholera attacks—those of well-marked "intoxication"—**Calomel** was the only drug which held its own; for again and again in individual cases a change for the better appeared to be connected with its use. It seldom produced unpleasant concomitant effects, such as stomatitis or diphtheritic inflammation of the intestine. All other antiseptics were discarded after longer or shorter trial. Perhaps none of them was so fully and universally tested as salol; internally (6—10 grms. (1½—2½ dr.) per diem), and subcutaneously in ethereal solution; but we saw no results from its use. The same holds true of the other drugs recommended, creolin, cresol, chlorine water, etc., the taste of which was, besides, a drawback to their extended use. They never warded off threatening collapse, nor could we dispense with our most important remedial measure, *i.e.*, injections, by employing them. Lactic and hydrochloric acids did not affect the course of the cases.

In this epidemic, **Injections** have come to be used in enormously increased quantities, being employed subcutaneously, also intravenously (introduced here by Dr. Rieder), and even as the intra-arterial injection of Landois (Dr. Schede). A sterilized 0·6 per cent. solution of **Common Salt** was usually made use of, with the addition less often of 0·1 to 1·0 per 1000 of **Thymol** (Dr. von Heinleth), or 1 per 1000 of **Hydrogen Peroxide** (Prof. Rumpf); and 1 to 2 litres (1¾ to 2½ pints) were injected at any time. The immediate result was surprising, but often of short duration. The injections were repeated in individual

cases, often two or three times, or even more frequently. It is beyond dispute that by this means and this alone, a large number of patients were saved ; the exact proportion of cures will be given later. It was these injections, along with the free use of **Oil of Camphor** subcutaneously as an excitant, which proved the only assured remedy, albeit in many respects merely a symptomatic one, in the algide stage, by replacing lost fluids, by the addition of warmth, and by strong stimulation (especially with intravenous injection) of the flagging heart ; and we ever and again recurred to it. Sometimes protracted injections were advantageously combined with **Diaphoretic Baths** (Dr. Zippel).

Symptomatic remedies were employed as follows. For vomiting, **Cocain** and **Chloroform** were beneficial, as also thorough **Washing out of the Stomach,** which is intelligible, as there is evidence of toxic albumens in the vomit of cholera patients (cf. Alt, "Deutsch. med. Woch.," 1892, No. 42) ; for symptoms of cramp, in addition to small doses of **Morphia, Hot Baths** for the whole body were used. These latter were taken willingly by those who were moderately or seriously ill, and with good general effect. If we differ from Cantani in this observation we believe we find a satisfactory explanation for it in the variation of body-temperature in different cholera epidemics, which we emphasized at the outset ; for a hot bath must affect fevered (internal measurement) and non-fevered cholera patients in different ways. Similarly it may be that the temperature of 40 to 42° C. (104 to 107·6° F.) which we reckoned as the most advantageous for intravenous injections, may likewise experience a modification in other epidemics.

The therapeutic trials of E. Klebs (cf. Manchot, "Deutsch. med. Woch.," 1892, No. 46) rest on quite another footing from any yet mentioned. He injected the patient with the metabolic product of a pure culture of the comma bacillus as is practised with tuberculocidin, and obtained each time a lasting elevation of temperature to normal in the algide stage ; the later reactionary fever was absent. As far as we may judge from small numbers, there was a good result. The bacteria in the stools were not influenced in their vitality by this means.

I cannot enter into our manifold therapeutic exertions to meet the coma which followed on severe cases, even on many which had been snatched from the algide stage by injections, further than to state our inability to find any means of influencing its severe and almost always fatal course, whether by injections or venesection, diaphoretic baths, or diuretics.

CHOLERA IN RUSSIA, 1892. *Richard Sisley, M.D., M.R.C.P.*

There is much ignorance in England as to the sanitary measures which are not only in force, but enforced, in Russia; and it may be of interest to medical men to learn what really were the measures taken in Russia to check the spread of cholera, and to treat those affected with the disease. For my knowledge of these matters I am much indebted to Dr. Clemow, of Cronstadt, who was my guide in Russia, and who has since supplied deficiencies in the information I obtained during my visit to that country.

There is no doubt that Askhabad was affected with cholera in May, and the disease rapidly spread to Samara, Kazan, and Nijni Novgorod. Moscow was affected early in July, and St. Petersburg a little later. The earliest cases recognized occurred in workmen who drank infected water from the Neva. The symptoms observed did not differ from those recorded by most writers on cholera, and the most pronounced were vomiting, diarrhœa, and cramps. The bacilli of Koch were found in the dejecta, and were generally, if not universally, believed by Russian physicians to be the cause of the disease. The mortality of patients treated in the chief hospitals was said to be a little under 30 per cent., but was probably higher. One Russian physician estimates the mortality at 40 or 50 per cent., and says that, of patients admitted in the "asphyctic" state, 70 to 80 per cent. died.

The treatment found most serviceable was **Hot Air** and **Hot Water Baths. Calomel** was given internally. Various reputed antiseptics were given, but it was not evident that they were of use. High rectal injections were found to be beneficial. The quantity injected varied from 1 to 2 litres, and a 1 or 2 per cent. of **Tannin** was generally used.

In cases of collapse large subcutaneous injections of **Saline Solution** were given, and proved useful. The dejecta were generally sterilized by adding sulphuric and carbolic acid. In one hospital there is a special apparatus for boiling the sewage and matter from the *post-mortem* room. Clothes were usually disinfected by steam, but for fur and leather articles chlorine was used.

At the early part of the epidemic, a paper consisting of general information and instructions about cholera was widely distributed throughout Russia. This paper was drawn up with considerable care, and contains the best advice which was available in the country. It may be useful to give the chief points it contains. It will be noticed that the instructions have special reference to the conditions under which the people live:—

"The cholera poison (a bacterium) produces the disease, if introduced into the human bowel; it can only be so introduced if it gets into the mouth

and is swallowed. Consequently, to touch cholera patients, to rub them, to be in the same room with them is not dangerous. The cholera poison is very unstable. It is quickly killed by boiling, and by disinfecting fluids. People should not change their usual mode of life, but continue their usual work and, with certain exceptions, eat their usual food, but drink nothing cold. They should avoid chills to the abdomen, and not lie on the bare earth. They should keep their houses, clothes, linen and persons clean, and wash their hands as often as possible. Morning and evening, and if possible in the middle of the day, they should rinse the mouth with boiled water, to which a little vinegar has been added. Crockery and utensils should be kept clean. Pots, pans, plates, glasses, cups and such like, and also knives, forks, spoons, etc., should be washed in boiling water before they are used.

Boiled water, tea or black coffee, mint tea and camomile tea, may be drunk, and acid drinks made with boiled water may be taken. Boiled milk and cream may be drunk, unboiled they are dangerous. Wine and vodka (particularly if bitter) in moderate quantities may be taken before or with food, but intoxication is extremely dangerous.

Hot food should be taken in preference to cold, and cold dishes should have added to them acid sauces (vinegar, lemon juice, etc.), and pepper.

Crabs, mushrooms, and all raw vegetables, fruits and berries, particularly cucumbers, melons, water melons, plums, pears, peaches and apricots, should be avoided.

The simplest disorder of the stomach should not be neglected. On the first appearance of indisposition, pain in lower part of breast or abdomen, retching, vomiting and diarrhœa, send for the doctor; if there be no doctor near, to the priest or schoolmaster. To them are given the instructions for first aid in cholera.

On the first appearance of these symptoms the patient should take castor oil;* for an adult the dose is 1 tablespoonful, for a child above two, ½ a tablespoonful, to a younger child 1 teaspoonful.

If there is no castor oil, give the same quantity of pure salad or linseed oil. It is well to warm the oil, putting the phial into a cup containing hot water; it becomes thinner, and more easily swallowed. The patient should be put into bed to produce perspiration. Give as much hot tea, mint or camomile tea as he wishes. Use hot fomentations to the abdomen and feet, *i.e.*, hot salt or oats rolled in a towel or napkin; or hearthstones, plates, bottles or jugs with hot water or hot bricks, rolled in napkins or towels.

If the patient does not feel better, and diarrhœa and vomiting continue, give anti-cholera drops of Botkin,† to an adult 20 or 30 drops every half

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* It is of interest to remark that in St. Petersburg, at the beginning of the epidemic, castor oil was frequently given, but that several eminent physicians became convinced that the treatment was not satisfactory.

† ℞ Liq. Anody. Hoffmanni
Tinct. Cinchon. Co. āā oz. j
Quin. Mur. dr. j
Acid Mur. dil. dr. iss
Ol. Menth. Pip. q.s.

hour till diarrhœa and vomiting cease. To children at the breast 2 drops should be given every two hours; to those above two years, 5 to 10 drops every hour or two hours. A large dose must not be given without the advice of a physician. If cramps begin and the hands and feet get cold, rub the body with cloths or soft brushes, and to increase the warmth, put bottles with hot water, or still better hot bricks, rolled up so that they do not burn, and cover up the patient with blankets. To check vomiting give ice to suck. Give internally camphorated oil 15 to 20 drops every ten minutes or quarter of an hour, or at the same intervals give clysters of 1 tablespoonful of boiled warm water, and 15 drops of camphorated oil, and continue this treatment till the patient gets warm and ceases to be blue, and till vomiting and diarrhœa lessen. Give children half the quantities of medicine mentioned. Convalescents from cholera should, for at least a fortnight, eat very moderately; the best foods are meat broth, liquid oatmeal porridge, boiled milk, eggs soft boiled, small quantities of stale wheaten bread; and the best drinks are tea, and mint or camomile tea.

Disinfection.—The cholera poison (bacterium) lives in the stools and vomit; to destroy it, it is necessary to prepare one of the following solutions:—

(1,) Take 2½-lbs. common potash, or 2½-lbs. soda, 2½ pints hot water, and mix well till it is dissolved. To this add 2½ pints of tar, and mix till the tar is thoroughly dissolved, then add 50 pints of cold water and mix well.

(2,) If potash or soda is not available, and there are no weights to be had, take 3 pints (glasses, jugs, etc.) of wood ashes (or ashes of straw, etc.), add to 2 pints of hot water, and well mix. Add, stirring vigorously, 1 pint of tar. When the mixture has reddened (for which it is well to let it stand an hour or two) add 20 parts of cold water; let it stand, and carefully decant.

These fluids it is well to prepare beforehand. If neither tar nor ashes are to be had, take 6 pounds of slaked (or 3 pounds of unslaked) lime, and dissolve in 2½ pints of water. Prepare only as much of this solution as will be needed for one day, for it will not keep for more than a day.

One of these fluids should be used thus: (1,) Poured into the stools and vomit immediately they leave the patient; (2,) All wearing and bed linen, clothes or boots that have been soiled by the patient should be put into the fluid as soon as possible, but in all cases it is better to burn them if possible; (3,) The floor and walls soiled by the patient should be washed with the fluid; (4,) People attending the patient should wash their hands with it as often as possible; (5,) In chamber pots, utensils and basins into which patients have passed stools or vomited, an equal amount of the fluid should be poured. The linen of cholera patients should not be washed with that of healthy people. Cholera dejecta should not be poured into closets until they have been disinfected, as stated above. In villages dis-

infection should be similarly done, and the matter buried deep in the earth. As soon as diarrhœa appears in any one in the house, disinfecting fluids should be daily poured into the privies—roughly about a gallon of fluid to a barrel of the material to be disinfected."

It will be readily seen that these instructions are very thorough and that they are practicable, and so plainly given that they can be easily understood and acted upon, and they compare in some respects not unfavourably with the instructions issued last year by the Royal College of Physicians of London.

CHOLERA IN KASHMIR, 1892. *A. Mitra, L.R.C.P.*

The following were the special points observed :—

(1,) In a vast majority of cases the time of invasion was early morning.

(2,) Among persons beyond the prime of life, the mortality was about 60 per cent.

(3,) The disease was principally confined to the poorer section of the community, though several cases occurred among people in higher stations of life.

(4,) The first outburst of the disease was most malignant. It declined far more gradually than it commenced. It sometimes showed periods of renewed activity. As the epidemic abated, the type of the disease became less virulent, and, finally, the last few cases were of extremely mild nature, ending in recovery.

(5,) Eating of unripe fruits, or ripe fruits in large quantity, raw cucumber, fermenting buttermilk and putrid soft cheese, have in several instances been the exciting cause of an attack of cholera. Raw radish leaves and cabbage leaves, which are also eaten by lower classes of the people, also induced cholera in a large number of men.

(6,) In the treatment of cholera cases we rely on the principle of stopping the dejections in the early stages of the disease. We no longer believe in eliminative theory. The universal belief among the Kashmiris, lay and professional, is that the stopping of purging and vomiting locks up the poison of cholera in the system. I know of a large number of cases in which, under our treatment, purging and vomiting were stopped and the patient apparently recovered, but which were afterwards brought back to a fatal state of collapse by the administration of purgatives of an irritating nature.

(7,) Another malpractice among Yunani Hakims is the practice of venesection during collapse stage. It is needless to say that this procedure removes the last flickering hope of life that remains.

(8,) Several instances of relapse came to my notice in patients who returned too early to their avocation in life.

(9,) On the 5th of June a heavy shower of rain fell, and the river water rose high ; Dud Ganga and all the city canals were filled to overflowing. The epidemic suddenly took a favourable change from the next day, which was no doubt due to washing away of infectious germs and their destruction in the excessive quantity of water. Slight rain, on the other hand, always produced a different result.

(10,) From the beginning to the end of the epidemic I noticed a blue mist hanging all over the mountains surrounding Srinagar, the same as was noticed during the epidemic of 1888. It may be the same kind of blue mist as was observed by Glaisher in London. I do not claim to establish any causal relationship between this mist and the epidemic, but it might be that the mist and the cholera were due to certain common meteorological conditions. From the 20th of June the mist began to disappear ; the mountains and the snow on them were clearly visible for the first time after a month and a half. The air was felt more exhilarating, and it was in everybody's mouth that the epidemic was declining. Surely enough such was the case.

(11,) A distinct tepid stage intervening between the algid and reactionary stages was noticed in a large majority of cases. This stage was the most critical ; 80 per cent. of deaths occurred in this stage.

(12,) Suppression of urine was the most common complication : next to it, meningitis. Skin eruptions, such as roseola, were observed in several cases. Special paresis, such as loss of vision or power of hearing, impotence, and the like were also observed. Five cases came to my notice in which inflammatory foci were started in upper and lower limb, and death resulted from erysipelas. Sloughing of cornea was noticed in several instances. Chronic dysentery carried away many cases.

(13,) After observation in several cases, the following was found to be the average temperature in cholera patients. Evacuation stage ranging from 94° to 95° in axilla. Collapse stage ranging from 90° to 93° in axilla ; 99° to 101° in rectum. Reactionary stage ranging from 95° to 98°, which may go up higher if reaction is very sudden and active.

(14,) The temperature, pulse, and respiration during the evacuation stage are great prognostic indices in a case of cholera.

(15,) That during the epidemic its influence was acting on the general population was evident from a great preponderance of patients suffering from diarrhœa and indigestion.

(16,) It was interesting to observe how from day to day the epidemic steadily marched from the centre of the city towards other parts.

This march was very rapid towards overcrowded parts where sanitary conditions were necessarily bad, but it was slow towards those parts of the city where population was sparse. It was interesting to observe how the epidemic in several instances travelled along houses on one side of the street, leaving the other side entirely immune. People living in those parts of the city where there was scarcity of pure water suffered most.

(17,) There were a great many cases amongst recently arrived Panjabis, their constitutions being rendered more susceptible by fatigue of journey or want of sufficient care on the road, or it might have been that they arrived in an infected condition from the Panjab.

TREATMENT.—*Special Methods tried during Epidemic at Kashmir*;

(1,) **Salol.**—Fifty cases: recovered twenty-two, died twenty-eight; mortality 56 per cent.

(2,) **Lorbeer's Cure.**—During the administration of the medicine, no water is allowed to be given. This proved impossible in many cases. Thirty-four cases given in the early stage: recovered fourteen, died twenty; mortality 58·8 per cent. Sixteen cases given during collapse stage: recovered five, died eleven; mortality 68·7 per cent.

(3,) **Plomer's Cholera Mixture** was found to be a useful stimulant in the collapse stage.

(4,) **Treacher's Cholera Mixture.**—A useful astringent.

(5,) **Cotter's Cholera Pills.**—Ten cases; six recovered and four died. No appreciable change was observed after the administration of the pills.

(6,) **Doji's Mixture and Pills.**—Tried in two cases; both ended in death.

(7,) **Curton's Cholera Pills.**—Twenty cases; eleven died, nine recovered. No change for the better was noticeable after administration of the drug.

(8,) Hypodermic injection of **Morphia** and **Atropia,** combined with **Sulphuric** and **Carbolic Acids,** etc., internally, as advocated by Surgeon-Major Ross, ("Indian Medical Gazette" page 107, vol. xxv.) did not give any encouraging results.

(9.) **Argenti Nitras** internally, and as an enema. No improvement followed this treatment in four cases in which it was tried.

(10,) **Cannabis Indica.**—One case made a rapid recovery; the drug was given after the first stool; two others died.

(11,) Intravenous injection of **Little's Saline Fluid.** In the collapse stage a sudden change for the better took place, which, however, was very temporary. It was tried in a few hopeless cases, and it failed in all.

(12,) **Gum-ammoniac** internally, together with **Stimulants** and injection of **Sulphuric Ether** during collapse stage, as tried by Dr. Retter von Giacich in the Fiume Hospital, produced no effect in the collapse stage of five cases in which it was tried.

(13,) **Blistering** over the vagus. No appreciable change takes place after its use.

It may sound very discouraging, but it must be admitted that our therapeutic resources for the treatment of cholera are still very unsatisfactory. One case here may have recovered under salol treatment, or another case there may have been cured by Lorbeer's Cure; but by extensive trial of these and other so-called cures for cholera, I am in a position to say that we do not as yet know of a drug, the administration of which can reduce cholera mortality to any appreciable degree.

Synopsis.—(Vol. 1892, p. 148) In India **Salol** has been successfully used, giving 10 grains with 15 minims of **Chloroform** every two hours, the maximum quantity given being 90 grains, and the minimum 40.

In the Fiume Hospital the algide stage was treated with **Gum Ammoniac** internally, together with **Stimulants** and **Sulphuric Ether** hypodermically, and **Warm Baths** were often advantageously used.

CHOLERA INFANTUM.

E. Meinert, M.D., Dresden.

What is Cholera Infantum?—Many medical writers apply the term, cholera infantum, to a more or less violent gastro-intestinal catarrh of young children; others limit its use to its most pernicious form, which recurs as an epidemic in the summer months. Some hold that the diarrhœa occurring in babyhood, as also at other periods of life, is in all cases the same disease; whereas others regard the summer diarrhœa of children as a distinct disease. It is, of course, allowed to everyone to designate as he chooses a malady, the nature of which is still so much veiled in obscurity.

In order, however, to open the way to its true conception, it appears necessary first, to examine how far it is possible in the light of our present knowledge to distinguish the various forms of acute gastro-intestinal disease of infancy. For cholera Asiatica alone do we possess a scientifically irreproachable criterion, *i.e.*, the comma bacillus. Both dysentery and pseudo-dysentery—colitis, to which belongs the "communicable diarrhœa" (Hippius)[1] which makes its appearance every year on the continent of Europe, spreading far and wide—have satisfactory clinical characters. The ætiology is quite plain of those cases where the disease follows upon weaning, change of milk, mistakes of diet, feeding the cows with certain herbs, severe colds, or psychical sensations, such as fright or terror. If, however, we were to bring together all the forms of the disease which have been

observed and investigated, they would comprise but a small portion of the sum total of diarrhœal illnesses which belong to the period of weaning. They do not, moreover, assist us in any way in explaining the season epidemics which are so wide-spread.

As far as I can discover, the first to accomplish this was Dr. Johnston, of Leicester, in 1878. His method was to collect personally information concerning each case. But the most extensive and complete investigations made upon this subject since 1878, are those carried out by Dr. Ballard under the British Local Government Board's instructions. It would be difficult to overestimate the fruit of this inquirer's researches in this province. The preliminary results of his great investigations are put down in the Seventeenth Annual Report of the Local Government Board, 1887-88.[2] It was according to a similar plan that I proceeded with the kind assistance of Dr. Hecker, Dr. Schottin, and Dr. Gilbert,[3] in Dresden. The summer of 1886, which I chose for the purpose of confirming if possible the results of the census of Dec. 1, 1885, proved so far favourable to my end that it brought with it an epidemic more wide-spread than any of previous years. Within eleven weeks of warm weather 10 per cent. of all children in Dresden under one year of age died.

Our investigations likewise elicited that the official statistics of the cause of death among sucklings are useless. From July 11 to Sept. 25, according to the "Reports of the Municipality," two hundred and eighty-one infants (under one year of age) died of convulsions, and three hundred and eighty-two of diarrhœa. From the information, however, which we were able personally to acquire through the official communication of every single death (seven hundred and ninety-six in all), and by the kind permission of the consulting doctors, it transpired that in thirty-six cases only death had been due to genuine convulsions, whilst five hundred and eighty were due to diarrhœal disease. Of the diarrhœal cases, thirty-five were cases of chronic and one hundred and one of more or less acute gastro-intestinal catarrh. The remaining four hundred and forty-four cases broke out very violently and bore a close resemblance to one another in their course. Children, generally healthy, suddenly became hot and restless, breathed irregularly, drank and perspired profusely, until they were attacked suddenly with vomiting or diarrhœa, or both, either together or one following the other. The diarrhœal discharge soon became watery, the skin, previously hot, cooled considerably, the voice became hoarse and afterwards whimpering, and often these symptoms were within a few hours followed by a considerable loss of flesh and weight. With or without convulsions children succumbed in a week on an

average; many long before then, even on the first day. In 1886 also we found—and our similar investigations in 1887 confirmed it—that the greater part of the infants who died in the summer were the victims of a disease which showed so much resemblance to cholera as would make the name, cholera infantum, not altogether unsuitable.

I, at any rate, should like, when I speak of cholera infantum, to be understood to refer to this disease alone. During sixteen years' study of this disease, I have met with it only in the hot season of the year and in the three or four weeks following. I should, however, like at once to express my conviction that the name, cholera infantum, will be tolerated in medical terminology only so long as our knowledge of this devastating disorder remains in its present imperfect state. I recognize in the diarrhœa, with Dr. Ballard, merely a symptom, by no means characteristic, of a disease as yet unknown to us in its true nature. Dr. Ballard says: "Its specific cause, if sufficiently potent, may operate generally throughout the system with the suddenness of a virulent chemical poison. It usually first shows its presence by more or less general disturbance of the nervous and vascular systems; one would say, at any rate, that, as a rule, other parts of the body are disturbed before the gastro-intestinal system. . . . . I may here state my strong opinion, almost my belief, that the malady, usually characterized by diarrhœa, may run its course from first to last, and even to death, without any remarkable diarrhœa at all."

Etiology.—The hypotheses concerning the causes of cholera infantum are numerous, and my account makes no pretensions to completeness. Moore[4] identifies the disease with the Asiatic cholera. Lesage[5] also believes, indeed, that it has to do with the operation of the same poison as in cholera Asiatica, but supposes that this same poison is produced by a different micro-organism (bact. coli commun.?). Reed[6] suspects an unknown something in the air as the cause of the disease; Bouchut[7] microbes of the genus ascophora, which attach themselves to the milk, while Johnston[8] seeks the specific cause in the emanations of sewers, and Ballard (*l.c.*) in the upper strata of the earth. Several authors declare cholera infantum to be the manifestation of malarial poisoning; others, such as Virchow[9], ascribe a certain amount of influence to the depth of the subsoil water. Seibert[10] puts it down to the decomposition of the milk brought into the large towns. Vaughan[11] claims to having established that the poison is generally the tyrotoxicon in the casein of the cow's milk. Sonnenberger[12] believes that infections and intoxications of different kinds lie at the bottom of it, and lays particular stress upon

the transference of plant-alkaloids from the fodder of the cow to the milk. Schoppe[13] recognizes in the disease a kind of shock felt in consequence of the intestinal influence of fermentation upon the splanchnic nerve. Uffelmann[14] attributes a portion of the cases to infectious causes, but is of opinion that sour milk may be the origin of most. But the generally received opinion in Germany is that derived from the bacteriological researches of Escherich[15] and Baginsky[16], namely, that the disease is called forth not indeed by specific parasites, but by the usual saprophytes of the milk in the formation of toxical alkaloids.

We thus see that the ætiological investigation moves in two main directions. Corresponding to the clinical observations, which point to an infection or an intoxication, some search for the pathogenic micro-organism, others for the toxin of cholera infantum. It is assumed that, since artificially-reared children are especially liable to an attack, the germs or toxins attach themselves only to cows' milk. But seeing that cholera infantum does not occur except in the hot season, it is thought that, apart from the body, the discovery of its specific cause is connected with certain grades of temperature.

It is no difficult matter to expose the error of such a line of reasoning. The fact, indeed, remains, that especially those children are attacked who have been fed artificially. Yet we know also that children nurtured at the breast are not wholly spared (in Dresden 4 per cent. of the children who died of cholera infantum had never received any other nourishment than mother's milk). How could the infection or intoxication be explained in the case of those children who were weaned at the breast? for women's milk is free from toxin. And even though, according to Cohn and Neumann,[17] it is not always altogether free from micro-organisms, nevertheless, as these authors emphatically declare, the staphylococci and streptococci which are found are unable to effect either a decomposition of the milk or any injury whatever to the babe.

How, for instance, should cholera infantum be explained in south Italy,[18] in Greece,[19] and in Egypt,[20]—countries where nursing at the breast is alone known? If you ask in a family of numerous children, some of which have been sorely attacked by cholera infantum, how the usual supply of milk has affected the rest of the children, you will almost always be told that it has done them no harm. Milk, so poisonous as to cause the death of a child within twenty-four hours of its being taken could not be swallowed by any one without provoking some sign of distaste. In the sole case which has, as yet, been made public, in which Dr. Vaughan[21] found tyrotoxicon in cows' milk, all the people

who had drunk it fell ill together, young and old; but not one of these was a case of cholera infantum.

It cannot, therefore, be affirmed that this disease, breaking out as it does in such extraordinary epidemics, is caused by germs or poisonous matter contained in the milk. In this way, it is true, cases of gastro-enteritis arise at all times of the year. We are also aware that scarlet and typhoid fevers can be engendered by infected milk. But my meaning is that it makes nothing for and all against such an assumption that cholera infantum makes its appearance so suddenly in the summer only. Just as little can it take its rise from the use of sour milk. Dr. Ballard declared at the fifty-first meeting of the British Medical Association (1883), that he had found in his researches no reason to ascribe any influence to the use of sour or unwashed feeding bottles. In the south of Germany, indeed, in consequence of the recommendations of Osthoff[22] and Demuth,[23] sour milk is actually highly valued as a preventive for babes against summer diarrhœa, and I often prescribe it myself without any evil consequences. Putting aside all theories as to how the illness begins, I am nevertheless of opinion that in cholera infantum there is a poison at work, and that it is possible, nay probable, that this poisonous substance is produced by micro-organisms. I am, however, disposed to place its development in the intestine. The intestine of the infant, not excluding those suckled at the breast, secretes micro-organisms (viz., saprophytic germs) in such quantities that it is not necessary to search for the sources of the demonstrated fermentation in the bodies of children who have died of cholera infantum outside the child's organism. The question which confronts us is rather, if I am not mistaken: Why is it that dangerous decomposition is developed in the intestine of one child and not in that of another? And although this may not be the right wording of the question, we shall still treat the subject aright if we investigate the conditions under which children live who are suffering from cholera infantum.

Dr. Hirsch in his well-known handbook[24] (which has been translated into English) declares that the summer diarrhœa of children made its appearance as an epidemic only in those districts whose average temperature for the day in the hot season is rather more than 15° C. (59° F.). From other sources we know that cholera infantum does not develop itself in every quarter where the thermometer rises above these limits. It prevails in the large towns more especially, although it is not altogether unknown in the country, as several authors seem to think. Its spread, moreover, within the walls

of large towns proceeds according to the most unusual laws. It does not follow the waterways and thoroughfares; it does not regulate itself according to the height of the barometer, or the depth of the subsoil water; it is unaffected by dampness or drought; and even inordinate density of population, which in nearly all epidemic diseases is a highly important consideration, plays but a subordinate part in cholera infantum. In Dresden we came upon thinly populated districts with a high, and densely populated districts with a low, mortality. The different classes were nevertheless visited in a very different degree: 60·8 per cent. of the children who died in 1886 belonged to the working class; 23 per cent. to the middle class, and only ½ per cent. to the higher and educated classes; 15·7 per cent. were illegitimate.

The epidemic broke out simultaneously in most distant parts of the town, and the several groups of cases could not be traced back to any common source of milk supply. The cow's milk was always given boiled. Nineteen children suckled at the breast and four hundred and sixty who were fed with cow's milk died of the malady. There was but one family in which two children (twins) died at the same time; in other families there was only one case. The number of illnesses and deaths was not influenced in any way by the *direction*, but to a very great extent by the *strength* of the wind. High temperature with a strong wind was not accompanied with any danger, compared with a moderately high temperature and no wind. The most numerous and serious cases arose on hot days with a minimum amount of movement in the air.

These facts seemed to indicate that the key to the greater or less safety of certain streets and houses from cholera infantum was perhaps to be found in the greater or less freedom of access for the ventilating power of the wind. Two hundred and twenty-three streets were entirely free from deaths, whilst in fifty other streets over 20 per cent., in sixteen streets over 30 per cent., and in seven streets over 40 per cent. of the resident babies died. It transpired from these facts that the mortality was high in proportion as the obstructions were numerous, which the air streaming through the streets and into the houses had to overcome. High-lying streets proved on this account, *ceteris paribus*, less open to danger than low-lying ones; and buildings in the open than those standing close together (of which fact Dr. Turner,[25] of Portsmouth, has taken notice). No deaths from cholera infantum occurred in Dresden in houses which stood quite apart.

It is a fact useful as concerning the subject and highly satisfactory to myself, that quite independently of Dr. Ballard, I have come to

the same conclusion as that well known investigator with reference to the influence of the wind, and of restriction of and impediments to the free circulation of air (about and within dwellings) in causing cholera infantum. Our researches also show the reason why *density of population* has not so direct an influence upon diarrhœal mortality as *density of buildings* (whether dwelling-houses or others) upon area.

In the state of the dwelling-house, as I hope to make plain, we have a most important factor for the right understanding of cholera infantum. Is not the absence of free domestic ventilation, to which certain dwellings are exposed at every season of the year, injurious to health? Why, then, should this danger be able to work such mischief in the summer especially? In the cold weather even those houses which are situated quite out of reach of the outer air, are to a certain degree ventilated, because the hot-air of the house, by reason of the difference of temperature, is engaged in a continual levelling process with the cooler atmosphere outside. But in summer, as soon as the temperature of the outer atmosphere is balanced by the temperature of the air inside the dwelling, domestic ventilation is immediately paralyzed.

But if at the beginning of the hot season only, an atmosphere can develop itself in the house, which becomes injurious to infants (cf. Flügge[26]), why is it that cholera infantum prevails even during the three or four weeks after the fall of the high temperature? The closer stone dwellings stand together, the longer do they retain the heat they have once acquired. Since, moreover, the walls are built deep in the earth and become as it were a part of the earth; and the temperature of the earth sinks more slowly than that of the air; at the return of cooler weather warmth is communicated to the houses from the earth. This explains the fact that the epidemic mortality, which first begins when the earth's temperature, measured to a depth of four feet, is 56° F. (according to Dr. Ballard), can prolong itself into the last quarter of the year.

How far, however, can high temperature in dwellings, together with imperfect ventilation, do harm to infants? There are two ways possible. In such dwellings there arises an accumulation of certain gaseous products of decomposition, and of tissue changes, which affects most readily those individuals, infants especially, who remain at rest, whilst older children and grown up people change their individual atmospheres just as often as they change their position, whether in bed or when awake. According to Dr. Lehmann's[27] discoveries and those of Prof. Hempel, director of the technical high school in Dresden, the child with its head sunk in bed

breathes even under ordinary circumstances air containing four times more carbonic acid gas than is ordinarily met with in the atmosphere. With the want of house ventilation this would all the more easily lead to an intoxication with carbonic acid gas or other poisonous matters probably contained in the expired air. The thick black blood, indeed, found in the bodies of children who die of cholera infantum seems to point to an overcharge of carbonic acid; but the symptoms would, of course, not be explained by that alone.

The other dangers to which children are exposed in hot, insufficiently ventilated houses, are disturbances of the natural heat of the body. We know that air which is at once undisturbed, hot, and damp, is able to cause a rise in the temperature of the body. Hiller[28] has proved this on soldiers on the march, Kurrer[29] on stokers on steamships, Wunderlich[30] on bedridden invalids. In all such cases it is the mere retention of heat; the temperature of the body can rise above 40° C. without any other symptoms showing themselves, except heaviness in the head and increased thirst and perspiration.

How are the houses in which we found cholera infantum situated in respect to the temperature and dampness of the air? For the purpose of estimating the temperature, we visited on hot summer days in 1887 all the apartments of the first story in which children had died of cholera infantum the previous year. We found, at a distance of one mètre above the floor, temperatures which surpassed the average readings for the day in the shade by from 3·60 to 14·40° C. (*i.e.* 8·59° C. upon an average). Kubly[31] investigated the dampness in the air of poor dwellinghouses. Taking an average of his two hundred and twenty three observations he found 83 per cent. relative dampness, and as much as thirty-five times the enormous figure of between 90 and 98 per cent. If we remember that in addition to this the flow of warmth in almost all the children we examined was checked by thick coverings, there remains no doubt that, theoretically speaking, the danger of the retention of heat must have existed to an extraordinary degree. In order to convince ourselves readily of this, we measured the rectum-temperature of a great number of sound healthy children on hot summer days of 1887 in such houses where in 1886 deaths from cholera infantum had occurred, and we observed in several cases a febrile rise of temperature. At the sixtieth meeting of German naturalists I was able to demonstrate some curves, by which the transition of this fever to cholera infantum caused by the mere retention of heat was illustrated. Ten years previously, indeed, at the Dresden Gynæcological Society, I gave information concerning some cases in which I had observed fever

leading up to the beginning of the diarrhœal discharges.[73] Since then, other doctors have also published observations to the same effect (cf. Dr. Ballard, Cases iii., v., vii., ix., xi.), so that it looks as if undoubted cases of summer diarrhœa made themselves recognized by a preliminary attack of fever. Taking the conditions of life into consideration, we must suppose that a great portion at least of the cases originate in retention of body-heat, from which so many infants suffer during the summer, especially in the large towns.

How this development takes place is a question which is left to the future to answer. But I suspect that retention of heat is the preliminary condition to the existence of that toxin which so many, without knowing it, suppose to be the causal poison of cholera infantum, and which will most probably arise if, as I have explained, retention of heat is accompanied by an intestinal canal full of the remains of food tending towards decomposition.

Hiller (*l.c.*) has shown that fever consequent upon the retention of heat can be borne by soldiers without injury for many hours (which was also true in the case of the majority of children we examined). After the disappearance of its causes it is wont to vanish, leaving no traces whatever behind. Wunderlich[74] is therefore right when he declares "Insolation is a cause of disease, not a disease itself." But if injurious conditions continued to be present, in that case Hiller saw people succumb as if from sunstroke. An observation of Prof. Clarke-Miller (Univ. of Wooster, Cleveland, Oh.), seems to me to be highly interesting in connection with the analogy to these phenomena in adult persons: he says, "There are some striking resemblances between cholera infantum and sunstroke, so much so as to suggest a pathological relationship."[75]

And, indeed, if we consider that the conditions which bring on sunstroke during the hot season exist for none in such a high degree as they do for infants, and that, nevertheless, medical literature has nothing to say about sunstroke in their case, we must suppose that this malady has so far evaded our attention, because it is generally concealed under the mask of some other form of disease well known to us, but called by a different name. According to what I have so far submitted it is probable that the same disturbances of the natural heat which at times lead in grown-up people to sunstroke, in the case of babies, for certain reasons (not yet discovered), finally take that form of disease which is called cholera infantum.

If it is true that the air of the home plays such a leading part in the recovery from cholera infantum, there only remains to be explained why infants nurtured at the breast are less liable to this disease than

such as are reared artificially. Two advantages may be indicated which the former have over the latter in the struggle for the balance of heat. Whilst children fed with the bottle are often helplessly exposed for half-a-day to the dangers of the house atmosphere (*i.e.*, when the mothers go to their work), infants at the breast are taken out of bed at regular intervals for the purpose of being fed, so that in their case retention of heat cannot easily take place. It must, however, be of still further importance that the very act of sucking brings as much moisture to the babe as is required in hot weather by its constitutional needs. The secretion of the mother's breasts becomes thinner and more abundant by the fact that she instinctively consumes a greater amount of water in hot weather. The baby will thus be able to quench its increased thirst, without assimilating to itself more substantial nourishment in doing so than its diminished hunger in hot weather requires. Nature, moreover, meets its instinct for more abundant consumption of water by causing at first a very thin and, afterwards, an albuminous and fatty fluid to flow from the mother's breasts. The baby with the bottle on the other hand, unless it has a very intelligent nurse, will receive milk quite as concentrated in hot as in cold weather. If the usual quantity is given it, it will have too little water for the increased requirements of its body. But if as much is allowed as its thirst requires, then its stomach is loaded with an injurious amount of nourishment. This latter circumstance especially may contribute to explain why the disease, which in summer carries off so many of the artificially reared children of the lower middle class, is generally complicated with diarrhœa. That this disease in spite of nature's wisdom does not altogether spare children at the breast, and even attacks such children exclusively in southern lands, is explained by the fact that the supply of water to the stomach of the infant does not, in the case of all women, suit with equal completeness the child's requirements as dictated by the weather.

Investigations on this matter, for which I am indebted to Prof. Hoffmeister and Dr. Schweissinger, of Dresden, have disclosed that many women's breasts, and especially those whose milk is stopping, perform very imperfectly their functions with regard to supplying water to the infant.

Symptomatology.—Just as the dangers to which the health of infants is exposed are greater in some dwellings than in others, so the illness which is contracted allows of many grades of severity.

Very slight Attacks.—Among these may be classed the above-mentioned feverish state of short duration, which is accompanied with restlessness, irregular breathing and heart's action, profuse thirst

and perspiration. These in their rise are wonderfully like the ephemera (febricula) of unknown origin, which is met with especially in hot weather, and which in a moderate climate attacks children; and in the tropics,[5] but with endemic severity, affects grown-up people as well. In summer the disease becomes greatly augmented in force (which perhaps points to toxical influence), if certain local symptoms of a lighter nature are present, such as congestion of the lungs or of the brain, vomiting, or angina, over and above the diarrhœa. We are generally summoned to such children in the evening, when the temperature of the house has reached its maximum, and are astonished to find them in many instances fully restored on the following morning, although we had pronounced high fever to be raging the night before. As regards the more *severe cases*, causing excessive mortality among children in summer, all seem to begin with the ephemeral symptoms of the mild attacks, but afterwards they diverge in two directions. On the one hand (less frequently) we have hyperpyrexia and convulsions, without diarrhœa; on the other (more frequently) the sudden setting in of watery discharge of the bowels, accompanied by fall of temperature and collapse, often complicated with convulsions. Still, cases appear to be rare which pass through coma to death without diarrhœa or convulsions. Vomiting—usually only at the commencement—occurs in most cases, both diarrhœal and convulsive. Complications can arise in both groups, such as pneumonia, pleuritis, meningitis, peritonitis, thrombosis of the cerebral sinuses; and the secondary affections are hydrocephaloid, cholera, typhoid, and sclerema.

Differential Diagnosis.—Cholera infantum is distinguished from acute dyspeptic gastro-intestinal catarrh by means of unquenchable thirst; by the suddenness of the collapse; by hollowness of the face (facies cholerica) arising from the rapid loss of serum; and by the uselessness of opiates. Healthy and strong children more than others fall victims to the epidemics, not the weakly and dyspeptic, as is commonly believed. The disclosures of Dr. Ballard and myself have established this fact with absolute certainty. Dr. Ballard says in connection with this: "Our experience of these two Leicester epidemics, then, by no means supports an opinion commonly held that a summer diarrhœal epidemic makes its first fatal swoop upon the weakliest of children. Like a good many other *a priori* beliefs, it will not bear the test of experience. The evidence indeed tends the other way, namely, that weakly children require a longer exposure to the epidemic cause, whatever that may be, than healthy children." A rise in temperature brings with it not only an accompanying rise in

the number of children who fall ill, but also a greater severity in the individual cases, more frequent complication with convulsions and speedier death ; in fine, the well-to-do class becomes more and more drawn into sympathy, and older children, who are spared in a moderately warm summer, fall victims to the disease. Although sucklings have most to suffer from this disease, yet it appears in all its modifications in every time of life. *Cholera nostras of grown-up people* is not only clinically but also ætiologically identical with cholera infantum, and the different forms under which sunstroke appears are concealed by the symptoms of this infantile disease without diarrhœa.

The predominant predisposition of infants is explained by the impossibility of their avoiding the dangers of their own atmosphere, conditioned by their dwelling and clothing ; by the method of not taking into account the requirements of the time of the year, by artificial feeding, and by the great variability of their body temperature.

Pathological Anatomy.—The state of the body after cholera infantum varies according to the length of the disease. In the great majority of cases which come to be dissected, the illness has lasted some days, and one finds a highly acute (gastro-) enteritis, which most authors at once declare to be cholera infantum. It is, however, very remarkable that the signs of (gastro-) enteritis have never yet been found, if the disease proved fatal, before having run a course of at least twenty-four hours, even in cases which set in with violent diarrhœa.

The following is the condition of children who have died early : (1,) Intense *post mortem* rigidity ; (2,) Dark thick, though not coagulated, blood ; (3,) Overcharging of the whole venous and vascular system ; (4,) Violent hyperæmia of the meninges, veins and lower posterior portion of the lungs ; (5,) Cloudy swellings of the liver and kidneys (Dr. Klein's Glomero-nephritis) ; (6,) Completely intact gastro-intestinal mucosa ; (7,) Thin or watery intestinal contents. In Case viii. of Dr. Klein's report,[36] such a condition is reported even of a child, who died after an illness of twenty-seven and a half hours. In the last sixteen years I have seen a fair number of such cases demonstrated at the hospital in Dresden, by Prof. Birch-Hirschfeld and Prof. Neelsen. Children who died of genuine convulsions in the hot season, and grown-up people who died of cholera nostras or sunstroke, always—if the illness had an equally short course—showed a similar condition of body when dissected. Jacubasch[37] also, who has written the best German monograph on sunstroke, affirms that in most dissections of those who died of this disease, thin and even

watery contents of the stomach are found. These facts allow only of one interpretation, viz., that the pernicious summer diarrhœa is never the product of an enteritis, but depends upon paralysis of the bowels. Where enteritis is really found it is always secondary, and a result of an abnormal inflammatory transudation in the mucus of the stomach.

Pathogenesis.—In all probability cholera infantum is an intoxication. The poison, or a combination of poisons, appears to work upon the medulla oblongata, for there lies the centre for intestinal secretion, vomitings, convulsions, respiratory and vasomotor phænomena. Poisoning by carbonic acid gas can, although in a very small degree, be communicated to others, just as the retention of certain poisonous products of decay. But it may simply be a question of poison produced by intestinal bacteria. There is, it is true, no micro-organism which is specific for cholera infantum. Most probably the product proceeds from such germs as are found in the bowels of every sound man; germs, which it would seem are not virulent, but can attain virulence under certain conditions. These conditions exist only in the hot season, and are so well defined, that only children fall ill under their influence. This accurate knowledge of the individual predisposition enables us, in spite of our imperfect knowledge as to the poison which causes it, to obviate the disease. We are therefore in the same favourable position with regard to cholera infantum as to smallpox, for instance, which is preventable, because the individual predisposition is removed (through vaccination).

History and Geographical Distribution.—When one comes to consider the relationship which I have proved to exist between the conditions of dwelling and cholera infantum, the fact is readily accountable that only at the end of the last century the epidemic character of this disease attracted the attention of doctors (Rush[7]). Its spread was bound to advance with the same rapid steps as the development of modern large towns, and especially as the consequent want of proper housing for the working classes. The natural strongholds against the disease are the physiological nurturing of infants, and sufficient self-regulating domestic ventilation in hot weather. Countries in which the greater proportion of infants are artificially reared, and in which, on account of the prevalent cold weather, no attention is paid to the situation of houses—these must be the predisposed homes of cholera infantum in the exigency of a hot season coming upon them unexpectedly. This is why the complaints against the devastating force of cholera infantum arise from the most temperate zones. In these zones lie those lands where a short, hot summer, succeeds a long and cold winter, and in which large towns assist the epidemic by means of

closely-built high houses, and numerous working-men's families. For this reason the United States of North America is the classic land of cholera infantum. The difference of the temperature between January and July,[39] is in Africa, 3·4° C; in South America, 4·2° C; in Australia, 13·0° C; in Asia and Europe, 26·1° C; and in North America, 28·4° C.

Preventive Treatment, (α) *Public.*—Although no other disease, with the exception of pulmonary consumption, is so responsible as cholera infantum for the general mortality, yet hygiene has, to all intents and purposes, not troubled itself at all about it. Popular instructions upon the suckling of children, in some towns sterilized milk cheaply supplied to the poor, etc., have not been able appreciably to diminish the mortality of infants from cholera infantum. Assertions to the contrary (Flügge[40]) are never based on facts, and the only observations on which they rest apply to sick children, *i.e.*, those of Comby,[41] Uhlig, and Heubner.[42] It is, however, highly interesting and instructive that in England, results as unforeseen as they are extraordinary, were arrived at concerning cholera infantum after the passing of the Public Health Acts. Whilst the mortality from none of these diseases, which it was hoped would be quelled by these formidable laws, was lessened in the least, people were astonished to find that the *infant mortality* in those large towns, which had shown particular diligence in carrying out the Acts, sunk to quite an unexpected degree (Spencer Wells).[43] In all countries of the temperate zone, infant mortality is measured by the intensity of the summer epidemic, and the number of deaths from the cholera infantum. The explanation of the astonishing figures is easy. By the destruction of whole districts a number of those houses were removed in which cholera infantum had till then found its home, and, by the erection of well-ventilated new buildings, an equal number of dwellings were placed on the site of the old ones, in which cholera infantum could not take root. The main business of professed hygiene with reference to this devastating disease is contained in these facts.

(β) *Private.*—The business of private hygiene is to admonish the parents how to arrange in summer for the want of natural domestic ventilation by artificial means, and how they must act with regard to their children, in order to prevent injury from the air of the house.

For the first of these, in so far as it is not too expensive, all that the European does in the tropics to keep his dwelling cool and airy, should be recommended—sprinkling the boards and walls with water, and hanging up damp cloths. Unfortunately, none of the known means is of use for the houses of which we speak, not even leaving

windows open day and night. Everything will therefore depend on the second point—enlarging the child's powers of resistance. Parents will understand us best if we remind them of all they themselves are accustomed to do in order to make life bearable in their sultry dwellings. They dispose of all articles of clothing which are not absolutely necessary; they wash more often than usual; they change their underclothing more frequently; move their limbs about; change their position, sitting or standing; lie in bed half exposed; throw themselves from one side to the other even in sleep; and lastly, eat less and drink more. It will be our duty to tell people how prudent this instinctive behaviour of theirs is; that the infant, if he could make himself understood, would express the wish to be similarly treated; and what in this respect are the duties required of the parents to the child during the hot weather. It does not seem to me to be necessary to look into these matters more closely. I should only like to say that it is not an easy matter to determine for the benefit of uneducated people the concentration of milk suited to the temporary state of the temperature. I modelled my prescriptions upon the physiological feeding of infants, as being the most conformable to my object. I left to the infant the regulation of its own need of water, by allowing it immediately before its milk time to drink water, sugar-water, or any harmless watery fluid until its thirst is quenched. It will cease drinking as soon as hunger only remains. The water must have the same temperature as the milk to which the child has previously been accustomed. All families to which I gave these and all other necessary rules to act by were spared in 1877, although they had been visited by cholera infantum in the previous year. This may also in no small measure be due to the arrangement that the children should be taken a great deal into the open air, at those times of the day when the air of the house is most injurious. According to notes taken by us at the time, the sudden attack which precedes cholera infantum occurred in 19·67 per cent. of our cases, between 8 and 12 in the morning; in 47·54 per cent. between 12 mid-day and 8 in the evening; in 32·79 per cent. between 8 at night and 8 in the morning.

TREATMENT.—People may think as they like of the relation of cholera infantum to sunstroke; they must at any rate agree that in both illnesses the exhaustion which causes death finds its explanation in the same occurrence in the vessel-system. Enormous losses of water—in sunstroke, more through perspiration; in cholera infantum, more through diarrhœa—empty the vessels, till at length, when the disproportion between the room in the vessel and the contents has reached a

certain degree, the heart ceases to beat. This process has been traced out by Goltz, in his well known enquiry into the tonus of the vessels.[44] The thickened blood which remains accumulates in the large veins, whilst the motive power of the heart diminishes. We have seen that this corresponds to the state of the body both after cholera infantum and after sunstroke. From this it is seen that the *indicatio vitalis* for treatment is to replace the water which has been drawn from the blood and tissues. Intravenous injection of 0·6 per cent. solution of salt is not very easy in the small vessels of children. I therefore recommended[45] for emergencies the method of subcutaneous injection, and was rejoiced at the favourable results of the experiments made by Laudesmann[46] Weiss,[47] Förster,[48] and Demiéville.[49] Yet the cases where it can be applied will always be exceptional.

Fortunately, things stand so that, as long as children are able to swallow, it is always possible to give them an amount of water sufficient for their need in a natural way. The unerring measure of their requirements is their thirst, provided that the infant can appease it with a liquid which agrees with it. Milk, gruel, meat-gravy, wine or ice-water, are not suitable. When it retains a few teaspoonsful of such liquids, it receives too little to satisfy its thirst. You will not be far out in your estimate if you assume that an infant, afflicted with cholera infantum, loses one-tenth of its gross weight by perspiration. Baginsky[50] tells of a child of five months who lost as much as one thousand five hundred and seventy grammes in twenty-four hours. Pure water, sugar-water, and, if the child is accustomed to them, even tea of chamomile, fennel, etc., are eagerly taken and swallowed without difficulty, even though violent vomiting prevails up to the very last. If the child occasionally vomits a little, the liquid should after a few minutes be again offered to it. In this way, with short interruptions, from ¼ to ½ a litre of liquid is taken within an hour. Later on the intervals between the drinking become longer, till at last the child falls into a peaceful and refreshing sleep. The cow's milk, which can at once be offered on the following day, must be thinned with abundance of water (about ten times the amount), less at each successive meal, till after three days the usual concentration is reached.

Water given in quantities in cholera infantum is equally effective against both diarrhœa and vomiting. The sooner you begin to give water, and the more violent the discharges are, the more prompt will the result be obtained. In the first stages of the malady the effect is obtained almost immediately. Against the ordinary *dyspeptic diarrhœa* this procedure does not have much effect, for the very reason that thirst, which makes it possible to manage it, is entirely absent.

In cholera nostras of grown-up people on the other hand, it proves as effective as in cholera infantum. Dr. Fiedler, in Valparaiso, my former assistant, has observed many proofs of it.[5]

In both diseases, water given in a sufficient quantity is the analeptic *par excellence;* so that one is astonished to find that patients, who seem to be on the verge of death, are in their full strength after one or two days. They also wholly escape the secondary enteritis, if they are treated in good time (*i.e.*, when in the state of paralytic catarrh), which is unfortunately seldom the case. As for the rest, these little patients must be treated in exactly the same manner as soldiers suffering from sunstroke. In the first place they must have a cool douche or bath, be carefully taken into the fresh air, and only lightly dressed. In the stadium algidum, a hot bath should be resorted to. The treatment of such cases as at once pass into enteritis differs but little from that of ordinary gastro-intestinal catarrh, after the thirst has been somewhat allayed. Since the forms of this illness are usually very severe, this treatment does not always succeed in bringing the patients round; for the first attack, however, the treatment just mentioned has proved in my experience a sure and quick preventive. It might seem that this is too much to assert of such a malignant disease. But this treatment is as successful here as it is with sunstroke. The latter was a very common cause of death formerly in the German army, to which I at one time belonged, but since the introduction of the modern treatment—which is well-nigh the same as I recommend for cholera infantum—it is one of the most rare. This has also been in great part brought about by the instruction concerning prophylaxis, and the immediate treatment of sunstroke, which is given not only to military doctors, but to every officer, non-commissioned officer, and hospital corps soldier.

Neither is it enough that doctors should know how to struggle with cholera infantum. In Dresden, about a half of the cases of the disease died without ever seeing a physician; and when a doctor did visit a child he usually found him dying.

Let medical men no longer be of divided opinions as to what is the best treatment for cholera infantum, then their next care will be to show mothers how they can help themselves.

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and Surg. Journ.," vol. cxix., No. 1 ; [12] "Deutsch. med. Woch.," No. 49, 1890 ; [13] "Der Brechdurshfall der Säuglinge," Bonn, 1887 ; [14] "Handb. der Hygiene" ; [15] "Verhandl. d. Gesellsch. für Kinderheilk," 1889 ; [16] "Berl. klin. Woch.," No. 46, 47, u. 49, 1889 ; [17] "Virchow's Arch.," Bd. 126 ; [18] "Statistica della cause di morte," Ital. Minist. di Agricoltura ; [19] Olympios "Bayr. med. Correspond. Bl.," 1840, 184 ; Pallis "Annali univ. di med.," 1842, Aprile ; Stephanos "La Grece," Paris, 1884 ; [20] "Rapport annuel du Medicin Chef de la Statistique sanit. en Egypte," 1888 ; [21] "Med. News," Sep. 28, 1886 ; [22] "Münch. med. Woch.," 1887, No. 12 ; [23] "Vereinsbl. der Pfälz. Aerzte,"," Mai, 1887 ; [24] "Histor. geograph. Pathologie," Bd. iii. ; [25] "Sanitary Record," April 18, 1879 ; [26] "Beiträge für Hygiene," 1. Leipzig, 1879 ; [27] "Sitzungsber. der physikal.-med. Ger. zu Würzburg," 1889 ; [28] "Deutsch. militärärztl. Zeitsshr," 1885, 7 u. 8 ; [29] "Deutsch. Vierteljahrsschr. f. ö. Gesundheitspfl.," 1892 ; [30] "Eigenwärme in Krankheiten," p. 133 (2, Aufl.) ; [31] "Diss. Dorpat.," 1867 ; [32] "Centralbl. f. Gynäk," 1880, 22 ; [33] Pathologie u. Therapie.," Bd. 1 ; [34] "Amer. Journ. of Obstetrics," April, 1879 ; [35] Pasquale Studio delle mallatie febrile à Massaua. "Giorn. Med. del R. o esercito e della R. a Marina," 1891 ; [36] "Appendix A to Dr. Ballard's Report" ; [37] "Sonnenstich. und Hitzschlag," Berlin, 1879 ; [38] "Med. inquiries and observations," Philad. 1789 ; [39] "Humboldt," 1888, Nov. p. 430 ; [40] "Grundriss der Hygiene," p. 524 ; [41] "Semaine médicale," No. 45, 1890 ; [42] "Jahrb. f. Kindrheilk," xxx, 1 u. 2 ; [43] "Brit. Med. Journ.," Oct. 4, 1890 ; [44] Virchow's Arch.," Bd. 29 ; [45] "Verhandl. des 4, congr. f. innere Medicin.," 1885, p. 397 ; [46] "Therapie au den Wiener Kliniken." ; [47] Jahrb. f. Kinderh.," xxxi. 1, 2 ; [48] "Jahresber. d. Ges. f. Natur. u. Heilk.," i. Dresden, 1890-91, p. 28 ; [49] "Rev. Méd. dela Suisse Romande," No. 1, 1892 : [50] "Prakt. Beiträge für Kinderheilkde iii ; [51] "Therap. Monatsh.," 1891, Heft 12.

CHOREA. *Henry Dwight Chapin, M.D., New York.*

Dr. Moncorvo [1] affirms that **Methylacetanilide** is a valuable drug in the treatment of chorea. It is not only efficacious in controlling the choreic movements, but also relieves the other symptoms which accompany the disorder, such as mental troubles, insomnia, muscular weakness, derangement of digestion, etc. In a girl ten years of age, the progressive and serious march of the affection was stayed by daily doses of 40 centigrammes. The symptoms ceased in eighteen days, but the remedy was continued for a few days longer. Moncorvo believes that exalgine is much superior to antipyrin in the treatment of chorea.

Dr. Hugo Lowenthal [2] reports thirty-five choreic patients treated with **Exalgine.** The doses were 3 grains three times a day, in some cases increased to five times a day, so that the amount given in a day never exceeded 15 grains, nor fell below 9 grains, except in the case of a three-year-old boy, who was given 1½ grains three times a day.

The powder was administered in sweetened warm water. The duration of the cure varied from eight days to four months. The average duration was five to six weeks. Ringing in the ears, intoxication, motes before the eyes, vomiting, increase of existing pain, headache and cyanosis were occasionally noticed. In spite of such occasional bad results, the exalgine was satisfactory in the majority of cases.

Mackenzie[3] reports the case of a woman, twenty-three years of age, who had suffered from chorea for four years. The heart presented the usual signs of mitral stenosis. Treatment was ineffectual until blistering was resorted to. He ordered an emplastrum lyttæ, 10 × 12, to be applied around the right arm, midway between the elbow and the shoulder. The choreiform movement subsided considerably during the next two days. A similar plaster was then applied to the left arm. The movements subsided rapidly, and soon ceased.

Dale,[4] in speaking of the anatomical and pathological characters of chorea, says that although it has been a matter of dispute whether chorea has its seat in the spinal cord or in the brain, in England, at least, it is generally believed that the disease is situated in the sensory motor ganglia at the base of the brain, but especially in the corpora striata. The evidence in favour of this view is thus stated: (1,) That tonic, not clonic, spasm is characteristic of spinal irritation; (2,) The degree of control of the movements still maintained by the will; (3,) Their increase during emotion; (4,) Their cessation during sleep; (5,) The phenomena of hemichorea and its relation to hemiplegia; (6,) An affection of one-half of the spinal cord through its whole length is scarcely conceivable.

The frequency with which chorea is complicated with rheumatism leads the author to believe that these diseases stand in some close affinity to each other.

Nicol[5] describes three cases of chorea involving the laryngeal and pharyngeal muscles, producing a cough, which the author considers to be reflex. **Cocaine** employed in one of these cases led to the cessation of the cough.

Dana[6] has used exalgine in sixteen cases of chorea, and believes that it has an unquestionably specific action in ordinary cases. He gives the drug in 2-grain capsules three times the first day, four times the second day, five times the third day, and finally 3 grains five times daily if required. At the same time he administers the **Citrate of Iron** and **Quinine.**

REFERENCES.—[1] "Bull. Gen. de Therap.," May, 30, 1892; [2] Lowenthal, Editorial "Therap. Gazette," May 16, 1892; [3] "Med. Press," Dec. 23, 1891; [4] "Lancet," Oct. 31, 1891; [5] "New York Med. Journ.," July 30, 1892; [6] Ibid.

Synopsis.—(Vol. 1892, p. 149.) Moncorvo speaks highly of **Antipyrin**, also of **Exalgine** 4½ grains daily.

Dresch recommends **Sodium Salicylate** in small and repeated doses, well diluted with slightly alkaline water. Jenkins reports cases due to round worms successfully treated by **Turpentine**, which expelled the worms.

CHOROIDITIS. *William Lang, F.R.C.S.*

In a case of syphilitic irido-choroiditis, where mercurial inunction and iodide of potassium had failed to produce any improvement, although salivation had been twice induced, Lagrange injected 4 drops of a 1 in 1000 **Solution of Sublimate** into Tenon's capsule, the point of the syringe being inserted behind the equator of the globe between the recti muscles. He made four separate punctures for each eye, and injected 1 drop at each puncture. The improvement was so marked that a week later he repeated the treatment, injecting 2 drops at each puncture, and followed this up by increasing the dose to 3 drops after another week's interval; but this, unlike the previous doses, produced a marked inflammatory reaction, which quickly subsided. The improvement in the vision did not continue after the second injection; but it was then so good that the patient returned to work four weeks after the first injection. This treatment is not new, but the method of injecting the solution into Tenon's capsule appears to be a fresh departure, and is, perhaps, worth trying where milder means fail.

CHYLURIA. *Robert Saundby, M.D., F.R.C.P.*

Nugent has reported a case of chyluria in a man, aged twenty-two, associated with the presence of *filaria sanguinis hominis*, which was cured by the use of **Gallic Acid** and **Thymol**, in doses gradually raised to 20 grains of the former and 5 grains of the latter thrice daily, the cure being effected in two weeks. In commenting upon the case, Walsh has remarked that the use of thymol is new in the disease, but that this drug is very efficacious for the relief of tape worm.

REFERENCE.—"Indian Med. Gaz.," Dec., 1891.

CONDYLOMATA.

Synopsis.—(Vol. 1891, p. 11.) **Aristol** as dusting powder for moist condylomata.

CONSTIPATION.

Synopsis.—(Vol. 1892, p. 153.) **Abdominal Massage** is advised by Karnitsky, especially in children. Nias advises **Dietetic Treatment**, avoiding the use of crude starch. If drugs are used, **Aloes** and **Iron** in 1-grain pill is useful. **Compound Rhubarb Powder** and **Rhubarb Pill** may be given in tabloids, the latter being used thus without its bulky excipients. Where there is laxity of the rectal mucous membrane, with

tendency to protrude after difficult motions, Flatau recommends careful washing and drying, after which powdered Boric Acid is sprinkled or rubbed over the relaxed membrane; where the colon is torpid and the mucous membrane cannot be thus treated, the powder may be insufflated.

CONVULSIONS.

Synopsis.—(Vol. 1892, p. 155) Davis advises a few whiffs of Amyl Nitrite, followed by Chloroform Inhalations, when infantile convulsions are attended with cyanosis. These should be at once followed by Veratrum Viride Tincture hypodermically, using ½ drops for each year of age up to six years, and repeating the dose in half an hour should the attack recur.

CORYZA.

Synopsis.—(Vol. 1892, p. 156.) For bad colds Salicylate of Soda is recommended, *e.g.*, R Sod. Salicyl. ʒss; Syr. Aurant. Cort. ʒss; Aq. Menth. Pip. ad. ʒiv. Sig.—A dessertspoonful every three or four hours until the specific action is produced.

COUGH.

Synopsis.—(Vol. 1892, p. 156.) Gorodtzeff advises the prolonged use of Sinapisms as an excellent accessory treatment for troublesome coughs, considering them as a valuable adjuvant to, or frequently a substitute for, the use of narcotics. The plaster is composed of mustard and meal in equal quantities for adults, and 1 part to 3 for children, and it is kept on for a whole night, or even twenty-four hours; the plaster is renewed daily, and the site of application changed, *e.g.*, from front to back. Clark describes a paroxysmal "barking cough of puberty," for which he recommends a simple but liberal dietary of three or four meals daily, abstinence from alcohol, cold or tepid sponging, warm clothing, active outdoor exercise, early hours, etc. The throat may be painted with Glycerine of Borax and Oxychloride of Bismuth, and Morphine or Cocaine may be substituted for the morphine. Internally he gives Syrup of Bromide of Quinine and Iron, with Arsenic in small doses, or a pill of reduced Iron, Valerianate of Zinc, Belladonna and Nux Vomica; a Sea Voyage has proved useful.

CYSTITIS. (See "Bladder.")

CYSTS OF THE SKIN. *T. Colcott Fox, M.B.*

Sebaceous or Atheromatous Cysts; Dermoid; Hydatid.—Török, after an exhaustive comparison of twenty-one atheromatous cysts and five dermoid cysts, concludes that "wens" are nothing else than simply built dermoid cysts, as Paget suggested in 1853, and are not due to the blocking of the duct and retention of sebum. He made a special examination of the inner wall by Phillipson's acetic acid process, and confirmed Franke's conclusion that most atheromata contain papillæ, and therefore are not retention cysts. The contents were not sebaceous, but comprised horny cells, cholesterin crystals, the detritus of both these, sometimes also chalky masses and blood, very exceptionally fat. These cysts are mostly situated in the subcutis apart from gland structures, and small secondary cysts are occasionally found opening into the larger ones. Undoubted atheromata are

found containing a few hairs and sebaceous follicles ; exceptionally they consist simply of a connective tissue covering, and a simple epithelial lining. The majority present a well developed system of papillæ or ridges ; no ducts have been found. On the other hand, true dermoid cysts may be of perfectly simple construction, and in one Török found a duct. Atheromata are largely congenital and they run in certain families, but like ordinary dermoid cysts they may not start growing till later. They are due to an inclusion at a later period of fœtal life than a dermoid cyst.

Lutz suggests that small thin walled cysts, such as are apt to occur about the eye and cheek, and suppurating cysts, should be incised and emptied, the inside scraped out with a sharp spoon, which often brings away the cyst wall especially if helped with the forceps, and that subsequently tinct. iodi should be applied to help destroy the cyst wall.

Pollitzer examined an interesting case of *multiple dermoid cysts of the skin* in a woman aged twenty-four. Several of her family were affected in a similar manner. There were about a hundred-and-fifty tumours, from a pin's head to a small hazel-nut, some situated over bone, of a lemon-yellow colour, simulating xanthoma.

Pye-Smith records a case of multiple cysticercus of the subcutaneous tissues, and between the muscles, in an old soldier. The cysts were situated on the arms, thighs, neck, shoulders and face. They varied in size from a pea to a marble, were painless, moveable under the skin, rounded, smooth and elastic. Such a case presents great difficulties in diagnosis until a tumour has been removed. Perrin, of Marseilles, also relates a case co-existing with a tænia solium, and apparently due to a real auto-contamination. The cysts diminished from about fifty to a dozen in number.

REFERENCES.—Pye-Smith, "Brit. Journ. Dermat.," 1892 ; Pollitzer, "Journ. Cut. and Gen. Urin. Dis.," August 1891 ; Török, "Monats. f. prakt. Derm.," Bd. xii, 1891 ; Lutz, "Monats. f. prakt. Derm.," Bd. xii, 1891 ; Perrin, Intern. Cong. Derm. and Syph., 1892 (Brit. Journ. Dermat).

DERMATITIS (General Exfoliative Epidemic). *T. Colcott Fox, M.B.*

In the years 1890 and 1891 a remarkable "epidemic skin disease somewhat resembling eczema and pityriasis rubra" prevailed in the St. Marylebone and Paddington Infirmaries, and to a less extent in some other institutions mostly situated in the West of London. Dr. Savill has written an elaborate monograph on the cases occurring in Paddington Infirmary ; 19 per cent. of the large number of inmates were attacked. Some had the disease very trivially, but most

had quite half the surface of the body affected, and many were entirely covered with it. He defines the disease as "a contagious malady in which the main lesion is a dermatitis, sometimes attended by serous exudation, always resulting in desquamation of the cuticle; usually accompanied by a certain amount of constitutional disturbance, and running a more or less definite course of seven or eight weeks." There was a papulo-erythematous stage (three to eight days), a stage of desquamation (three to eight weeks), and a stage of subsidence; a tendency to relapse existed. The parts first attacked were the arms and forearms (22 per cent.), face and scalp (21 per cent.), feet and legs (14 per cent.), hands (13 per cent.), back, neck, chest or abdomen (each 7 per cent). The mode of spreading was usually by continuity. The constitutional symptoms were chiefly anorexia and prostration; the temperature was generally normal or subnormal. There was a characteristic tongue, vomiting and diarrhœa in some, albuminuria in 50 per cent.

Conjunctivitis, boils, and carbuncles were complications. The death rate was 12·8 per cent. and was much higher in males, and the aged, than females. Antiseptics applied early in ointment, lotion, or bath, cut the malady short. A most thorough investigation was made into the etiology of this curious affection. Food, soap, scabies, water-supply, were eliminated. Age, the male sex, and previous ill-health, were important factors. The conclusion arrived at was that a specific diplococcus was constantly present in the fluids and tissues of the patients, and was probably the cause of the disease. This germ was probably introduced into the system by way of the skin, but, possibly, by other portals. The paid staff enjoyed a remarkable immunity.

REFERENCE.—"Brit. Journ. Dermat.," Feb., March, 1892.

DERMATITIS HERPETIFORMIS.

Synopsis.—(Vol. 1892, p. 158.) Besnier uses **Fowler's Solution** (1 to 8 drops in twenty-four hours) hypodermically combined with the intermittent use of **Opium** or **Belladonna**. **Tonics** must be used. *Locally*, bullæ should be evacuated, and **Boric Lotion** with a little alcoholic solution of **Salol**, inert powders, moist impermeable dressings, oily applications, simple ointment, or wadding applied. Baths must be cautiously used, and if medicated, often prove injurious. For pruritus, a decoction of **Coca Leaves** (4 grammes per litre of water) is a useful local application. For intense congestive outbreaks, compresses of lint, soaked in **Sodium Salicylate** (2 per cent.), and **Sodium Bicarbonate** (1 per cent.) is a valuable dressing. Duhring recommends the revulsive stimulants, *e.g.*, **Tar, Carbolic Acid, Sulphur, Thymol, Ichthyol**, etc. **Sulphur Ointment** (℥ij-℥j) is best, but in the erythematous phase a weak solution of tar is preferable. Schwimmer found an aqueous solution of **Thiol** (1 to 3) useful. Stelwagon used a lotion of **Liq. Carbonis Detergens** and **Liq. Picis Alkalinus**; white **Tar** and **Carbolic Acid**. Taylor advises "**Listerine**" and **Calomel**, with special regimen, laxatives and derivatives.

DERMATITIS MEDICAMENTOSA. *T. Colcott Fox, M.B.*

There is a considerable literature each year on "drug eruptions," and it is of practical importance that knowledge of these conditions should be somewhat more widely distributed than at present. The literature chiefly consists in the multiplication of records confirming our previous knowledge. Thus Legiehn and Greidenberg relate instances of dermatitis from the local use of iodoform; Cartaz from salol insufflations; Müller from dermatol. These instances will serve to illustrate the irritant action of drugs, ordinarily harmless, in those persons possessing a special susceptibility.

Morel-Lavallée in an elaborate paper collects and discusses the *mercurial eruptions*, and shows that the habitual type of the rash following the ingestion and absorption of various mercurial preparations is scarlatiniform. The rash may be associated with marked toxic symptoms. Bürtzeff also mentions a curious case of idiosyncrasy towards mercury. Arnaud discusses the connection of scarlatinoid rashes and sublimate injections.

Arsenical keratosis of the palms and soles has been described by Erasmus Wilson, McCall Anderson, Jonathan Hutchinson, and recently by Crocker, Brooke and Pringle. It is important that this condition should be known.

Norman Walker records a rapidly-growing painless tumour of the nose apparently due to potassium iodide; Trapeznivof a case of vesicles and bullæ, with secondary ulceration and vegetations; and Lemoine a purpura from a similar cause.

Colcott Fox met with a severe eruption in an infant suckling a mother who was taking bromide of potassium. The case illustrated the lack of acquaintance with these medicinal eruptions; for though the eruption was quite typical, several medical men had failed to recognize it, and vaccination was assigned as the cause. Glaztein saw urticaria arising from salicylate of soda, Welch a scarlatiniform eruption from sulphate of quinine, and many writers describe the somewhat common rashes following the ingestion of antipyrin. All references up to date will be found in the forthcoming edition of Morrow's work to be issued by the Sydenham Society.

DIABETES. *Robert Saundby, M.D., F.R.C.P.*

Pancreatic Diabetes.—Cases of diabetes associated with marked disease of the pancreas have been recorded during the past year by R. T. Williamson and Vaughan Harley. The former has tabulated one hundred cases of pancreatic disease thus associated, the most common change being interstitial inflammation (cirrhosis) going on to complete fibrous atrophy. He suggests that if the cases could be

diagnosed, they might be treated by implanting portions of living pancreas under the skin, and Minkowski has shown that in animals rendered diabetic by extirpation of the pancreas, the development of the disease may be hindered by grafting pieces of pancreas in the tissues outside the abdominal cavity. We would suggest the injection of an extract of fresh pancreas, made and used in the same way as the injections of thyroid gland, which have proved so successful in some cases of myxœdema.

Nervous Origin of Diabetes.—It is doubtful whether true diabetes is ever due to a simple functional disturbance of the nervous system, but Teschemacher[1] has recorded the case of a boy, aged seven, who became glycosuric after being frightened by a dog, which attacked without hurting him. The sugar disappeared after eight days.

The Knee jerk in Diabetes.—The loss of the knee jerk in diabetes, first noticed by Bouchard, is common enough in severe cases. Eichhorst[2] has shown that in two cases examined by him the crural nerve was degenerated. He thinks that it is first poisoned, but that after a time visible injury of the nerve fibres takes place. This explanation reconciles the results of those examinations of the nerve in which no lesions were found (Nonne) with his conclusions.

Jambul in Diabetes.—The effects of **Jambul** in diabetes are still under discussion. Hildebrandt has shown that it certainly possesses the power of hindering the diastatic action of plant diastase, and the sugar forming ferments of blood serum, saliva and pancreatic extract. Henricks has used the powdered seeds and bark and decoction, but his results were negative or harmful. On the other hand, Raimondi and Rossi relate the case of a woman, aged fifty-eight, who was benefited by its use, and on discontinuing the drug the sugar rose again, to decrease when the drug was resumed. Further trials made by the writer of these notes, with a fresh supply of jambul specially imported by Messrs. Christy & Co., failed to show that the drug has any influence whatever on the excretion of sugar, or on the course of the disease.

The treatment of Diabetic Coma.—Dr. Ernest S. Reynolds[3] recommends as a simple and effectual plan of treating diabetic coma the following method: He first administers an aperient, and orders the patient to drink large quantities of fluid—a gallon in a night—together with 60 grains of **Citrate of Potash** in an ounce of water every hour. The fluid may consist of milk, lemonade, tea, water, or even barley-water. He credits Dr. Dickinson with having suggested this plan of treatment.

Stadelmann recommends the intravenous injection of 150 cc.

of normal salt solution (0·6 per cent.), to which are added 7·2 grammes sodium carbonate and 4·6 grammes sodium bicarbonate.

Loss of weight in Diabetes.—Dr. Lusk[4] has drawn attention to some experiments in Professor Voit's laboratory, which appear to show that the loss of body-weight in diabetes is due to the non-destruction of the food carbohydrates, so that fat is burned to equalize the sugar burned in the healthy organisms. The practical outcome of this should be to enforce the rule to supply diabetics with fatty food, cream, codliver oil, butter, fat bacon, etc., and to allow them as much meat as they can eat.

The treatment of Diabetes.—In a discussion at the Medical Society, held on March 14th, 1892, Dr. Ralfe maintained that it is dangerous and useless to allow diabetic patients to take a "modicum of bread, milk, mashed potato, and sub-acid fruits," as these are insufficient to restore the balance of nutrition, but enough to injure the patient. He thought **Opium**, or one of its derivatives, might be safely pushed so long as the excretion of sugar continued to fall. Dr. Pavy said that whenever a patient whose sugar had been removed by restricted diet, began to lose weight, this indicated the need for some starchy food.

Dr. Lauder Brunton recommends **Salicylate of Soda** in the treatment of those cases whose urine contains much uric acid or oxalates after the sugar disappears. He regards the ferric chloride reaction as contraindicating the use of opium or its derivatives.

Dr. Mitchell Bruce thinks that opium should not be used until the full effect of restricted diet has been tried, but that there are cases which might be allowed some amount of starchy food if morphine were given.

Mr. Stillingfleet Johnson does not believe that normal urine contains any sugar. The reducing agent which has been confounded with it is, in his opinion, uric acid.

Dr. Allchin does not consider that the amount of sugar in the urine can be taken as a safe guide to the diet of patients.

In our opinion it is wise in all cases where the general symptoms permit of curative treatment being attempted, to begin with a strict diet, from which, as far as possible, all starchy and saccharine matter is excluded, supplementing this by assimilable oil or fat, *e.g.*, cream, codliver oil, etc. When the full effect of this has been determined, if the amount of urinary water remains large—for example, decidedly over 100 ounces daily—opium should be given. In course of time, all going well, one or two potatoes daily may be allowed, with oranges and apples in moderation if desired. Milk should not exceed a pint daily. Each case must be dealt with on its own merits. The objec-

tion of Dr. Brunton to morphine in the presence of the ferric chloride reaction has never been suggested by our clinical experience.

Instrument for estimating Sugar in the Urine.—Dr. Edgar Gans has designed a simple little instrument for the estimation of sugar in the urine by means of fermentation. It is sold by Fiebig, 27, Alexandrinen Strasse, Berlin.

REFERENCES.—[1] "Berlin. med. Woch.," 1892, No. 2; [2] "Virchow's Arch.," cxxvii. 1., p. 1; [3] "Med. Chron.," 1891, p. 338; [4] "New York Med. Jour.," Dec. 5, 1891.

Synopsis.—(Vol. 1892, p. 159) Powdered **Jambul Seed** has been used in doses of from ½ to 1 ounce daily, and in some cases with good results, but it is important that the drug should be quite fresh. Dujardin-Beaumetz discourages its use in severe cases.

Salicylate of Sodium is regarded with some favour; Creasote in doses increased from 4 to 10 drops daily, is said to have removed the sugar in two cases. Bufalini found that **Arsenic** reduced the sugar 50 per cent in ten days.

Poulet gave **Basic Hippurate of Chalk**, 15-grain doses thrice daily, in water sweetened with **Saccharine**, and stated that in combination with strict diet it proved curative. **Ergotinine**, 4 to 7 drops daily, subcutaneously, together with **Vichy Water** and **Strict Diet**, is stated by Laurens to have cured diabetes in a lady at the climacteric. Dujardin-Beaumetz speaks highly of **Fatty Food**, also of bread made from **Soja Meal**, but the strong taste and aperient action are disadvantageous; he advises substituting one potato at each meal for bread, but condemns the use of skim milk, malt liquor and ripe fruit. Wright advises a diet of proteids, fats, and lævo-rotatory carbo-hydrates, suggesting that in spring **Jerusalem Artichokes** contain only lævulin and inulin; the latter is also found in dahlia tubers, dandelion, chicory, etc., and may be baked into good bread.

Diabetic Coma.—If due to fatty heart, Schmitz advises **Rest in Bed**, and use of stimulants, especially **Black Coffee**; if due to toxæmia, early and thorough purging, with a large dose of **Castor Oil**.

DIARRHŒA.

Frank J. Wethered, M.D.

In a number of cases of diarrhœa due to various causes, including phthisis, typhoid fever, erysipelas, and intestinal catarrh, which Dr. Shchegoleff[1] treated by means of **Lactic Acid**, a successful result was obtained in two days in fifteen, in three days in five, and in four days in three. In twelve cases of exanthematous typhus the treatment failed to have effect, but in thirteen others it was successful. The preparation used was an aqueous solution sweetened with syrup. In this form the drug was well tolerated, and no unpleasant symptoms were produced. The quantity of lactic acid given per diem averaged about 115 grains, or little more than half that given by M. Hayem, who first recommended this treatment, and this may perhaps account for some of the failures of the Russian practitioner. Acting on the advice of the latter, Dr. Chernisheff, who has also published an account of his cases, prescribed lactic acid in three cases of acute in-

testinal catarrh, in six of chronic gastro-intestinal catarrh, also in eight of diarrhœa due to phthisis, and in three of diarrhœa complicating Bright's disease. In all these cases good, sometimes striking, results were obtained. Thus several cases of simple catarrhal diarrhœa were relieved in from two to five days. In six cases of non-specific diarrhœa in phthisical persons the diarrhœa ceased the day after the commencement of the treatment. In one case of chronic gastro-intestinal catarrh the diarrhœa ceased on the third day from the commencement of the lactic acid treatment, but reappeared when it was stopped. Two days more of the treatment served to effect a more permanent cure. Notwithstanding the observations of MM. Hayem and Lesage[2] on the value of lactic acid in the diarrhœa with green stools of young children, according to whom lactic acid destroys the bacillus on which the condition depends, this medicament is rarely used, and, indeed, is not generally known to have any effect on infantile or other diarrhœa.

Surgeon-Captain Harold[3] recommends the use of **Strychnine** and **Digitalis** in cases of chronic diarrhœa, prescribing 4 minims of the tincture of digitalis, and 2 minims of liquor strychninæ. The author has also treated similar cases with small doses of strychnine with satisfactory results.

REFERENCES.—[1] Shchegoleff, "Meditsinskoe Obozrênie;" "Lancet," Dec. 19, 1891; [2] Hayem, "Lancet," vol. i. 1887, p. 1149, and vol. ii. 1887, p. 1020; [3] Harold, "Practitioner," Aug., 1892.

Synopsis.—(Vol. 1892, p. 162.) Eccles advises **Rest** and **Massage** in chronic cases. In diarrhœa of children, accompanied by wasting, the stools being light-coloured and semidigested, Hare advises ℞ Resinæ Podophylli gr. j.; Alcohol ʒj. Sig.—1 drop in a teaspoonful of water every five hours for a child of sixteen months, or two years. In cases due to fermentation, when much mucus, with or without blood is passed, he uses ℞ Hydrarg. Perchlor. gr. ¼; Aq. Destillat. ʒij. Sig.—1 teaspoonful every five hours. **Coto Bark** is useful, preference being given to the alkaloid **Cotoine** in 3- to 9-grain doses daily, and hypodermic injections have been proposed, but are very painful.

DIARRHŒA AND INDIGESTION OF INFANTS.

Henry Dwight Chapin, M.D., New York.

Dr. Blackader[1] considers some of the difficulties in rendering cows' milk a substitute for human milk. The former contains about double the amount of albuminoids, but less fat and sugar than the latter. It is usually acid and always contains microbes. The temptation to overfeeding is also great. The changes which milk undergoes in the sterilizing process renders it less readily and less perfectly digestible than new milk. Yet it is to be preferred to raw milk swarming with bacteria.

In some instances the author believes that condensed milk may be substituted for a short time. It has the disadvantage of being deficient in fats—the cream being to a great extent removed by the process of condensing, to avoid rancidity in the prepared article.

[We have made careful enquiry as to the truth of this statement, and we find that it does not apply to the best known brands of British and Swiss manufacture (Ed. "Med. Ann.")].

Of the cereals used for infant food, barley, wheat, and oatmeal are the most commonly employed. Of these, the author prefers barley. An excellent preparation is barley flour submitted to the action of heat of 212° F. for five or six days. It may be advantageously added to the milk for younger children, and form a fair proportion of the food of older children.

Dr. Hirst [2] considers that sterilization, as ordinarily performed, is a disturbing factor in the effort to produce an ideal infant food. The ascertained results are as follows: (1,) Albumen is coagulated; (2,) Caseine is less readily precipitated by rennet than in normal milk; (3,) Fat is freed to a slight extent; fat not freed has a lessened tendency to coalesce; (4,) Sugar undergoes some change, as shown by its lessened dextro-rotatory power. To obviate the action of the heat, a partial predigestion of the milk and cream by pancreatin is advised.

Dr. Monte [3] reaches the following conclusions after investigations upon, and analysis of, human milk: (1,) Every specimen of human milk which has a specific gravity of 1030 to 1035, and also from 3 to 5 per cent. of fat elements, in which also the specific gravity increases in the same proportion in which the fat elements increase, if both exceed the limits stated, and every specimen which also shows little variation in these elements during the nursing period, may be considered good and useful for the child who is to receive it for food; (2,) Menstruation exercises no constant influence upon the specific gravity and the fatty elements of milk. In some of the cases which were investigated by the author, however, there was an increase in the quantity of fat, which disappeared with the disappearance of menstruation; (3,) In those cases in which the mother's milk reached a high specific gravity during the period of lactation, and the fatty elements were in relatively small quantity, reckoning upon the standard which has been mentioned, the children did not thrive. Such a quality of milk must, therefore, be considered as not useful for a nursing infant; (4,) The excessive quantity of fatty constituents in human milk can be caused very readily by pathological processes, as by mastitis, or by any other extensive febrile process from which the mother may be suffering; (5,) Also, as a consequence of pathological

processes of long duration, a rapid or gradual diminution in the quantity of fat in the milk is sometimes observed.

Dr. Demieville[4] advises the subcutaneous injections of salt water in the treatment of infantile gastro-enteritis. The author provides himself with an irrigator, to which is attached a caoutchouc tube of a mètre and a half in length, and a Dieulafoy needle, all of which are disinfected. The quantity of water injected is proportionate to the total volume of both legs and feet; or else, in the same manner, the injection may be made under the skin of the belly. Massage must be practised after the injection in order to enhance the absorption of the liquid. In a case four-and-a-half months old, from 120 to 150 grammes of a sterilized solution of common salt of the strength of 6 per cent. was used.

Dr. Fussell[5] administers **Salol** in 5-grain doses, combined with 10 grains of **Bismuth**, and 2 drachms of **Chalk Mixture.** Infants are given 3-grain doses of salol. He states conclusions, as follows: (1,) Diarrhœa due to dietetic errors, and that which is common in adults and infants in summer is well controlled by this treatment; (2,) Opium is rarely necessary where salol is used; (3,) Salol controls the abdominal pain equally as well as opium; (4,) It is perfectly safe, having no bad after-effects; (5,) It is especially useful in the treatment of the diarrhœa of children; (6,) It is of no value in dysentery; (7,) It constantly corrects the fœtor of the stools.

REFERENCES. [1] Blackader, "Montreal Medical Journal," August, 1891; [2] Hirst, "Medical News," 1891, lviii. 5; [3] Monte, "Arch. f. Kinderh.," xiii. 1 and 2; [4] Demieville, "Journal de Médecine," July 10, 1892; [5] Fussell, "Ther. Gazette," August 15, 1892.

Synopsis.—(Vol. 1892, p. 166.) Subcutaneous injections of $\frac{6}{10}$ths per cent. **Salt Solution** have been used in cholera infantum; 30 to 35 centimètres are injected at a time into the skin of the abdominal wall, and may be repeated if collapse renders it necessary (Weiss). **Salol** is used in doses of 15 centigrammes to 2 grammes in twenty-four hours by Moncorvo. Broughton employs **Zinc** and **Sodium Sulpho-Carbolate**, and in mild cases ℞ Hydrarg. Chlor. Mitis. gr. j; Sodii Sulpho. Carb. gr. 20; Sacch. Pepsin. gr. 19; Ft. et div. in chart. 10. Sig.—1 every three hours for a child from one to two years old. If the stomach is very irritable, use **Zinc. Sulpho-Carbolate** gr. ¼ and 3 grs. of **Bismuth Salicylate** to each dose instead of the Sodium. For very severe and dangerous cases, with profuse and watery discharges, use ℞ Bismuthi Salicylatis ʒij; Zinci Sulpho-Carb. gr. 4; Mist. Cretæ. ʒj; Tr. Opii Camph. Aquæ āā ʒss. M. Sig.—ʒj every two hours until the bowels are controlled. Luff recommends the soluble **Biniodide of Mercury** in the anti-fermentative treatment of infantile diarrhœa, *e.g.*, ℞ Liq. Hyd. Perchlor. ♏12; Chloral. Hydrat. gr. j; Potass. Iodid. gr. ¾; Aq. ad. ʒj. Sig.—To be given every four hours to infants up to six months old. Thomas employs **Lactic Acid** in green diarrhœa, believed to be due to bacillary infection, *e.g.*, ℞ Lactic Acid 2 parts, Simple

Syrup 15 parts, Water 85 parts. One teaspoonful a quarter or half an hour after each meal, or more often if required; also useful in gastro-intestinal dyspepsia, with vomiting, flatulence and diarrhœa of non-slimy fœtid stools containing undigested curds. Milk Sterilization.

DIGESTION: ITS PATHOLOGY AND THERAPEUTICS. (See also "Dyspepsia.") *Professor C. A. Ewald, M.D., Berlin.*

The views concerning the importance and mode of operation of hydrochloric acid in the process of digestion have undergone a remarkable change during the last few years. Whereas physiology maintained up to a very recent date that hydrochloric acid, which is secreted in the stomach, served solely in conjunction with the pepsine to bring about the transformation of albuminous bodies into peptone or albumose (*i.e.*, the intermediate products between albumen and pure peptone), at the present time there is a tendency towards the opinion that the essential function of hydrochloric acid consists in its anti-fermentative properties. If the contents of the stomach were of a neutral alkaline nature, or contained only organic acids, the principal action of hydrochloric acid would consist in the prevention of abnormal decompositions, caused by germs which have been introduced with the food, and which produce fermentation. Less importance is attached to the peptonising influence of the gastric juice, and the intestine is credited with performing the chief process in the digestion of albumen. The physiological chemist Bunge, is the chief representative of this view. It is based also on the fact that a number of cases have lately been observed in which the absence of hydrochloric acid in the stomach has been demonstrated by an examination of its contents, obtained by means of the stomach tube, while digestion was going on, although disorders arising from the stomach were either entirely absent or unimportant, more especially that symptoms of any serious derangement of the organ could not be found.

Cases of this kind have been observed by Jaworski, Grunzach, Ewald and others, and relate to the absence of so called free hydrochloric acid, as well as to its total absence.

The secretion of hydrochloric acid in the stomach, regarded from a general point of view, may be divided into two stages: The secretion of the glands takes place immediately after the introduction of food, which acts as their stimulus, and the hydrochloric acid is used up in the stomach as fast as it is secreted, to satisfy the existing organic and inorganic bases, and to form loose combinations with the albuminous bodies wherever they exist. Though a dissociation of these combinations may be easily effected, the hydrochloric acid loses its character as a free acid, and cannot be demonstrated by

those reagents with which we can prove the existence of a free acid (Congo-red, Günzburg's reagent).

Hydrochloric acid in these combinations may be designated *fixed hydrochloric acid* and, when united with an organic substance, as *loosely combined hydrochloric acid.* After some time, however, the duration of which depends upon the quantity and quality of the food introduced, this process of saturation is so far completed that in case of normal secretion a certain amount of free acid, from between 1·5—2·5 per mille is found. This state of normal secretion is then designated as *euchlorhydria;* when the proportion is exceeded it is called *hyperchlorhydria*; if not attained, *hypochlorhydria*; whilst that condition in which no hydrochloric acid can be traced in the gastric juice may be designated as *achlorhydria.* Hyperchlorhydria and hypochlorhydria are not identical with hyperacidity and hypoacidity, for the acidity of the contents of the stomach, that is, the quantity of alkaline matter necessary for their neutralization (usually expressed in a percentage of deci-normal soda-solution), depends not alone on free hydrochloric acid, but also on acid salts, and sometimes also on other organic acids. We see by the above that there can be total achlorhydria, as well as relative achlorhydria, according as loosely combined hydrochloric acid is present and only free acid is absent, or as an elimination of acid is altogether wanting, without of course taking into consideration the small quantity used for the formation of inorganic salts.

Even without free hydrochloric acid, peptone can be formed, as I have shown years ago; but if no hydrochloric acid at all is secreted the formation of peptone ceases as well. Moreover, the co-operation of hydrochloric acid in the process of digestion must not be underrated, and the opinion of those investigators who regard it as solely an anti-fermentative force, must be regarded as excessively one-sided. But hydrochloric acid, like all inorganic acids, has doubtless an intense anti-fermentative power, which depends upon its presence in the free state.

This effect must in any case cease in total achlorhydria, and the stomach in such cases is nothing more nor less than a preparatory depôt, out of which the foods are conveyed into the intestine undigested, but soaked and softened. The proper function of digestion is then performed by the intestine.

With regard to the diagnostic importance of the above named three phases of the secretion of hydrochloric acid, the following general remarks may be made.

Hyperchlorhydria is a symptom of intense stimulation of the secre-

tive parenchyma affecting the mucous membrane as a whole (*e.g.*, conditions of general nervous excitement), or which proceeds from some circumscribed point within its area (*e.g.*, hæmorrhagic erosions, gastric ulcer).

Hypochlorhydria, on the other hand, is based upon diminished activity of the glands, such as attends depressed conditions of the nervous system or constitutional diseases, indicating general weakness of the organism; also in acute and chronic fevers, and finally in acute and chronic catarrh of the stomach from local causes.

Achlorhydria is the extreme of hypochlorhydria; it is therefore not only occasioned by the conditions that have just been mentioned, and especially by severe nervous depression and intense catarrh of the gastric mucous membrane, but also by all those changes which lead directly to a destruction of the parenchyma. To this category belong cancer of the stomach and atrophy of the mucous membrane, better called anadenia, or phthisis mucosæ. The function of hydrochloric acid in the gastric juice is therefore of great importance for diagnosis, and much more for treatment, for I have shown above that the validity of the diagnostic conclusions to be drawn from it is not unconditionally and unexceptionally certain. Cases of gastric ulcer arise without hyperchlorhydria. Dr. Saundby has recently published cases of this kind, and in cases of declared cancer of the stomach which has developed from an ulcer, a normal and even increased elimination of hydrochloric acid is sometimes observed. These are the exceptions which prove the rule. But perhaps more important even than its diagnostic importance, though advancing *pari passu* with it, is the consideration that various diseases which are attended by the same clinical symptoms (as, for instance, neuroses, catarrh and dilated stomach), exhibit very different amounts of secretion, and accordingly demand an entirely different therapeutic treatment. It would be quite wrong to prescribe without further consideration hydrochloric acid, or stimulants, for all neurasthenics, because certain forms of neurasthenia commence with an extraordinarily increased secretion. Conversely, not every case of gastralgia is to be treated with alkalies, because many are not attended by a heightened or even a normal formation of hydrochloric acid. But disordered states may occur which closely resemble catarrh, whilst in reality there exists a continuous elimination of gastric juice, containing hydrochloric acid, requiring an altogether different regimen to that for gastric catarrh. Hence the importance of testing the elimination of hydrochloric acid, not only from a diagnostic, but also from a therapeutic point of view. I will not, however, enter any further in this place into

these various phases, but discuss the particular cases of achlorhydria, which run their course and may exist for many years without subjective symptoms. I have said above that such cases are observed, and as an instance I will give the following case of *anadenia gastrica* which has occurred in my own practice.*

I saw Mr. M., aged twenty-nine, for the first time in 1889. He complained of severe dyspeptic pains, fulness, heaviness in the epigastrium, flatulency and eructation, lassitude, small appetite and constipation. He was very emaciated, and incapable of doing his work. In the contents of his stomach there was neither "free" nor "combined" hydrochloric acid; peptone, pepsine, or rennet ferment; the ingesta were unaltered. There were no indications which betrayed neurasthenia or spinal irritation or hysteria; no organic disease was recognized, especially no tumour in the stomach, and no syphilis. On the basis of the foregoing conditions the diagnosis pointed to *atrophy of the mucous membrane of the stomach.* From ½ to ¾ litre of a 5 per cent. solution of hydrochloric acid was daily introduced into his stomach by means of a tube, so that the patient obtained daily about 3 to 4 grammes of hydrochloric acid. Besides this, the stomach was faradized, and an easily digestible nutritious diet was prescribed. The patient soon learned to introduce hydrochloric acid without assistance. The treatment was continued consistently for more than a year, the patient in the interval practically losing all pain, becoming stout and strong, able to do his work, and increasing *twenty-one kilos* in weight.

The chemical state of this patient's stomach has been repeatedly examined by me during the last three years, under the most varied diet, and on no occasion was any trace of free or loosely combined hydrochloric acid to be discovered. Great quantities of a solution of hydrochloric acid, which were poured into the empty stomach, and pumped out again after twenty to thirty minutes, showed even in cases where the liquid still contained hydrochloric acid, no peptic digestion (*i.e.*, albumen discs were not dissolved by it) at the normal temperature of the body. It may be taken that no pepsine was formed in the glands.

Cancer may at once be excluded from the various conditions mentioned above, which lead to this state of the secretion of the mucous membrane of the stomach. Against this is the age of the patient, and especially his speedy recovery and good condition of health, which has lasted now for more than two years. This does not

* For further details of the method of investigation, *see* Prof. Ewald's Lectures on "Diseases of the Digestive Organs." Translated by R. Saundby, M.D., New Sydenham Society, London, 1892.

occur with cancer, although in that disease periods of temporary improvement are not excluded, and cases of cancer have been mistaken for hysteria on account of such varying conditions, especially in the case of women. It is more difficult to exclude the possibility of the existence of a purely nervous malady. Of course such cases may lead to an entire loss of the function of the glands. Yet our patient never suffered from definite hysterical or neurasthenic symptoms. Moreover, disorders of the functions of the glands usually cease with the pains in these neurotic conditions, instead of persisting as in the case of this patient.

By excluding other forms of disease, we recognize the presence in this patient of a so-called atrophy, or anadenia, of the mucous membrane of the stomach. This process has been known to us histologically for some time, it was perhaps best described by S. Fenwick, and more closely studied by Osler, Nothnagel, Meyer, myself and others. But a clear diagnostic recognition of the condition has only been possible in recent times, during which we have learnt how to ascertain the special chemical changes of this malady. The disease consists of a wasting of the secreting parenchyma of the gastric mucous membrane, in which the glands over a great part of the surface are destroyed, and replaced by fibrous tissue. This change of the gastric mucous membrane occurs mostly in consequence of chronic inflammation, generally called chronic catarrh. Accordingly it appears especially in elderly persons who are known to have suffered for a long time from dyspeptic disorders. Careful observations of cases by Litten, Boas, and others, go to show that this condition can occur in younger individuals without it being possible to assign any fixed cause. As regards the subjective symptoms of these patients, more or less severe dyspeptic disorders may exist along with the resulting impediments to digestion, without any serious attacks of pain, or vomiting, or hæmatemesis. Beyond a severe and often very rapid emaciation, foul tongue, and at times scaling of the skin, no particular anomalies are to be traced. Especially conspicuous by its absence is any tumour in the region of the stomach, or swelling of the glands, but the examination of the contents of the stomach, after Ewald's test breakfast,* or any other diet you wish to choose, shows a very pregnant result, namely, that the peptic functions of the stomach have entirely ceased yielding either hydrochloric acid, pepsine, peptone, or rennet ferment. The food taken is quite undigested, and it is to be

* Ewald's test breakfast consists of a roll and 300 grammes of tea, without milk or sugar, and is to be withdrawn by means of the stomach-pump one hour after it has been taken.

specially noticed that it is withdrawn without admixture of mucus. The filtrate of the contents of the stomach does not digest albuminous bodies at the normal temperature of the body, even when so much hydrochloric acid has been added as to ensure the presence of from 2 to 3 per cent. If larger quantities of about 500 grammes of water, containing hydrochloric acid from 2 to 3 per cent., are poured into the patient's empty stomach, and withdrawn after twenty to thirty minutes, it will not digest albumen in an incubator; in other words, no pepsine is separated out of the gastric glands by means of the hydrochloric acid, as always occurs under normal conditions.

These conditions coincide entirely with those of our patient, and substantiate the diagnosis as atrophy of the gastric mucous membrane. That this total loss of secreting parenchyma may become a serious and even fatal malady, is a matter of course. If the digestive process ceases, and cannot be replaced in any other way, and the food stagnates in the stomach and decomposes, a disturbance of nutrition is sure to occur, powerful enough ultimately to cause death. Doubtless a number of deaths in old people, where the *post-mortem* examination has yielded no sufficient result, should be ascribed to such atrophic conditions of the stomach and intestine which escape detection in a superficial survey of the organs. Whence does it arise that our patient, in spite of the complete absence of gastric digestion, still apparently enjoys perfect health, and has permanently increased in body weight? Evidently because the contents of the stomach are transferred so soon into the intestine, that no opportunity is afforded for their stagnation in the stomach and the development of decomposition and fermentation, whilst the intestinal digestion takes over the work of the stomach, and completely replaces it. The peristaltic action of the stomach must be in good working order, in spite of the disorder of the secretion. It is only when the activity of the stomach-muscles relaxes that the symptoms of muscular atony (*e.g.*, dyspeptic disorders) occur, and are generally described as catarrhal. Later on we have all the signs of gastric dilatation and fermentation of its contents, which may be more or less intense. Such a transitory muscular atony must evidently have existed in our patient, and was removed along with the accompanying catarrh by the treatment.

When once such an atrophy of the mucous membrane of the stomach has begun, there are no means of arresting its progress, nor are we in a position to replace in a sufficient degree the digestion of the stomach by artificially introduced digestive ferments, such as pepsine with hydrochloric acid, pancreatic juice,

or papayotin. These means, in my experience, have much too weak an effect adequately to supply the functions of a normal mucous membrane. The large doses of hydrochloric acid which we gave our patient do not operate as a digestive, but only as an anti-fermentative, and only result in checking the occurring processes of decomposition. The sole possibility in such cases of alleviating the pain of the patient is to be found in transferring the contents of the stomach as quickly and as completely as possible into the intestine, and by allowing the intestinal digestion to take the place of that of the stomach. The more perfectly this is done the better will the disorder of the function of the stomach be reduced, and the less pain will the patient feel. The condition only becomes severe and incurable when the muscles of the stomach become relaxed and inert, and the glands of the intestine and pancreas cease to work.

Our chief therapeutic task, therefore, is to strengthen the muscular action of the stomach, and to counteract decomposition; in fact, the conditions of chronic catarrh. Both tasks must proceed hand in hand, and be accompanied by the disinfection of the intestinal canal. For, interchangeably and in close connection with the stomach, atonic conditions of the muscles of the intestine occur, whereby through stasis and decomposition of the contents of the intestine on the one hand, and abnormal fermentation with its consequences on the other, irritating products of decomposition are formed, which may lead to chronic catarrhal inflammation of the intestinal mucous membrane. The result will be the various forms of flatulency with the accompanying pains and nervous disturbance. To these belong the neuroses of the heart and lungs, conditions of tachycardia, breast-pang, pseudo-angina, and subjective dyspnœa, which are very distressing, and especially so when their cause is misunderstood, as is frequently the case. Other symptoms are: Irregular bowels, at one time loose, at another constipated, with copious secretion of mucus.

Internal remedies designed to strengthen the movement of the stomach and intestines, are unfortunately uncertain in operation. Strychnine, belladonna, physostigmine, extract of Calabar bean, may, as physiological experiments show, strengthen the tone of the muscles and stimulate peristaltic action, and they do excellent service in transitory disorders, but they soon fail in their effects, and you cannot use them long enough in quantities sufficient to ensure success in these cases of chronic muscular weakness. Small doses appear to be without result. Of external remedies the first to be mentioned are **Bodily**

Exercises, in the form of riding, swimming, and every kind of sport. Herein, doubtless, is an excellent means of strengthening the muscles. I should especially recommend rowing in boats with sliding seats, and lawn tennis. The English nation has the inestimable advantage that these bodily exercises have for long been in favour, and are highly developed. Experience, however, teaches that even these exercises are not always sufficient, and that even a methodical active pursuit of gymnastics is not enough to attain material and continuous improvement. In the second place, we may mention **Massage**—mechano-therapeutic exercises. It is, of course, evident that any kind of massage can only exert a passive pressure upon the underlying parts, and can ensure no active exercise of the organs, except in case of the so-called Wiederstand's "Massage." Indirectly, however, they acquire an increased functional activity on account of the improvement in the circulation, and consequent improvement in their nutrition. Finally, we may employ **Electricity** to stimulate contraction of the stomach and intestine. If the electrodes (as has been customary hitherto) are placed solely upon the outer surface of the abdomen, only the surface muscles contract and exert pressure upon the stomach and the intestine. This pressure, however, does not work in a continuous direction, but only compresses the contents, so that, for instance, if the sphincter of the stomach is closed, an injurious influence (*i.e.*, a dilatation of the walls of the stomach) must result. It is, therefore, better to faradize the stomach muscles, or those of the intestine directly. This is done by means of small electrodes, which are inserted by means of a slender stomach tube into the stomach, which has previously been filled with water. These electrodes, of the size and form of a small gooseberry, are made of a preparation of smooth hard india-rubber, which forms a capsule with numerous holes of the size of a pin's head. In the interior of this capsule is a central piece of copper or brass, to which the connecting-wire is attached. The latter passes, as I have said, through an india-rubber tube the size of a pencil, with very thick walls, measuring about 1·5 mm. (*vide Fig.* 4). Such an electrode, of which a similar, but not so serviceable a form, was first invented by Einhorn, of New York, a pupil of mine, can easily be inserted into the stomach, because the tube affords in itself a certain consistency. On the other hand, it is so pliable and

Fig. 4.
Stomach Electrode.

thin that even though it remain in position a considerable time, it does not occasion the patient particular discomfort. If, now, the other broad and flat electrode is applied to the outer abdominal wall you may easily see that the current is conveyed from the stomach to the abdominal wall, and occasions contraction. By special experiments, I have proved that by this method the muscles of the stomach also are contracted. For if, simultaneously with the electrode, a second slender tube, with a thick wall, is introduced into the stomach, and connected with a manometer, it shows an increase of pressure in the interior of the stomach, even when the circuit is not completed on the surface of the abdomen, but over the sternum, and consequently a contraction of the muscles of the abdomen *does not* occur. In a similar way the intestine may be faradized ; in which case care must be taken previously to cleanse the rectum thoroughly by an enema, and then to fill it with water before the electrode is introduced. In this way the gastric and intestinal muscles may be directly influenced, and, after a wide range of experience, I have every reason to be satisfied with the success of this internal faradization, which not only accelerates the transfer of the contents of the stomach into the intestine, but also stimulates the peristaltic action of the intestine and counteracts the stagnation of the contents of the stomach and of the intestine. Proof of this is given, not alone by the diminution of the patient's sufferings, but by the circumstance that they recur in an increased proportion whenever the faradization is checked before a permanent effect has been produced and the muscles are able to act for themselves.

Disinfection of the Intestinal Canal.—As regards the second important indication, viz., the disinfection of the intestinal canal, I am happy to refer to the exposition which my celebrated colleague, Professor Dujardin-Beaumetz, has published in the volume of the "Medical Annual" for last year. Although I accept completely the views of this eminent physician, as is proved by the fact that I have long been enunciating the same principles (cf. Ewald, Klinik. der Verdauungskrankheiten, 1889), I may add the following remarks : The disinfection of the gastro-intestinal canal has for its object, to supply a bad nidus for the bacilli which are introduced into it, or exist therein, and to weaken their decomposing properties ; in other words, to render innocuous the poisons which are formed there, and to expel the bacilli and their products as quickly as possible from the body.

For this purpose, until very recently, the following remedies have been especially recommended, and that too by Dr. Dujardin-Beaumetz. —salicylate of bismuth, benzoic-acid, resorcin, salol, and betol, as well

as α-naphthol and β-naphthol. The latter preparations belong to the so-called aromatic series, and their antiseptic and anti-fermentative properties have been tested by experience. Moreover, the specific poisonous influence peculiar to them is less intense, so that they can be introduced into the human organism in relatively large doses.

All salicylic acid preparations have an irritating influence upon the kidneys, and must not be used in those cases where a weakness of the latter exists. Salol separates in the intestine into salicylic acid and phenol, the latter of which, if used for long, may easily occasion toxic conditions. Naphthol preparations and resorcin have a very irritating action upon the mucous membrane of the upper parts of the intestine, and have a repulsive and pungent taste. Betol finally has only a very inferior anti-fermentative action.

Free from these drawbacks is a preparation which has recently been made under the name of **Benzoyl-Naphthol** (see Dict. of New Remedies, p. 11). To judge by experiments by Dominici and Gilbert, the toxic action of benzoyl-naphthol is slight, while its antiseptic and anti-bacterial action is stronger than that of resorcin or salol. A daily dose of 5 grammes can be administered without hesitation, by which the toxicity of the urine is appreciably decreased. I have convinced myself that the diarrhœal contents of the intestine, mixed with benzoyl-naphthol, may stand for days at the normal temperature of the body without any considerable development of gas, whilst with other tests an abundant formation of gas occurs. Fermentation consequently is impeded by benzoyl-naphthol. Here too, of course, the result is not equally good in every case. In some experiments a development of gas occurred even with benzoyl-naphthol; perhaps, because in proportion to the added naphthol, too many fermenting organisms, or a peculiar kind of the same, were present. But at any rate we have obtained in benzoyl-naphthol a new intestinal antiseptic, which is not inferior to the above-named preparations, and which surpasses them in a better taste and in a less powerful poisonous action.

A very useful *antiseptic of the stomach* is **Creasote,** but it is very important that the preparation should be free from impurities. I am accustomed to prescribe it, together with **Balsam of Tolu,** which weakens the irritating action of creasote, and to give pills of ·05 gramme of pure creasote, and ·02 gramme balsam of tolu, which are to be obtained of all chemists in Germany, coated with chocolate or sugar; 2 to 5 of these pills are to be taken three times a day. Patients at first complain of eructation with the smell and taste of creasote, but this diminishes in proportion as the creasote prevents the fermentation in the stomach, and the consequent formation of gas and eructation. I have very

seldom found that creasote became intolerable. It, as well as its derivatives, has in recent times been used in the treatment of consumption, with excellent results which have been attributed directly by some authors to the favourable influence of creasote on the digestive tract. **Guaiacol** is best administered in a spirituous solution, of about 10 grs. in 150; as much as 45 to 60 drops several times a day. **Salicylate of Bismuth** exercises also an anti-fermentative action in the stomach, and at the same time alleviates pain. In order therefore to render the disinfection of the stomach and intestine as complete as possible, I prescribe in such cases :—

℞ Creasot. puriss.		Pulv. et succ. liquidit. q. sat.	
Resorcin. sublim.	āā 5·0	u.f. pilula no. C.	
Extr. Gentiani	2·0	Obduc. mass. Cacao.	

Sig.—Take 2 pills three times a day at first, afterwards from 3 to 5.

℞ Resorcin. sublim.		Pulv. rad. Rhei	75·0
Bismuth. Salicyl.		Pulv. rhiz. Calami	
Benzoyl-Naphthol		Sacch. alb.	
	āā 10·0—15·0	Sodæ Bicarb.	āā 5·0

Sig.—Take 1 teaspoonful every two hours.

I lay particular stress upon the administration of the antiseptic at short intervals, and in as large doses as possible. According to the above prescription, the patient would imbibe about 0·5 grammes of benzoyl-naphthol every two hours.

DIGESTIVE SYSTEM (Diseases of).

Synopsis.—(Vol. 1892, p. 173.) Antiseptic cleansing of the large intestine advised by Dujardin-Beaumetz, to remove products of putrefactive fermentation in cases of dilatation of large intestine, cancer of rectum and mucous or pseudo-membranous enteritis. A solution of α-Naphthol 0·25 c.grm. per litre of water, or Iodine Tincture 10 to 20 grammes per litre is used, 1 litre being sufficient for a single injection; at the same time a diet of eggs, farinaceous food, green vegetables and fruit is adopted; any meat, vegetables, or fruit must be well cooked, stewed, etc. For drink: milk or white wine, mixed with eau d'alet, is advised. Internally as an antiseptic ℞ Salol, Bismuth Salicylate, Sod. Bicarb. āā 10 grms. Divide into 30 doses; 1 to be taken before breakfast and dinner.

In pseudo-membranous colonitis the irrigation is carried out with solutions of α-Naphthol, Chlorate of Potash, or Iodine, and the last is best, using 10 grms. Tincture of Iodine to 1 litre of water, increasing the dose to 20 grms., and at the same time adopting vegetarian diet, with Salol and Bismuth Salicylate internally.

DIPHTHERIA. *Henry Dwight Chapin, M.D., New York.*

Dr. W. D. Booker[1] makes a distinction between diphtheritic and scarlatinal angina based upon : (1st,) Clinical features ; (2nd,) Anatomical changes ; (3rd,) Ætiology. In diphtheritic angina, the membrane, in fresh cases, is white, has thick, tough, consistence, and

can be stripped off in large shreds. Suppuration is exceptional, pain and swelling not prominent, no tendency to ulceration, extension chiefly on the surface, and by continuity preferably to the air-passages. In scarlatinal angina, the membrane has a yellow colour, cannot be stripped off in connected shreds ; tendency to ulceration and suppuration ; adenitis of more pronounced inflammatory character and purulent destruction of tissues frequent ; penetrates more into the depth, and frequently extends by continuity to the ear, seldom to the larynx.

Dr. Koplik[2] reports certain forms of diphtheria which simulate single angina. Specks on the tonsil are deceptive, and the method of diagnosing them with certainty lies only in the direction of bacteriological methods. The presence of membrane is not at all pathognomonic of true diphtheria.

Dr. Thursfield[3] reports outbreaks of diphtheria and scarlatina coincident with febrile eruptions in cows. Milch cows were subject to a number of eruptive and febrile affections of the udder variously described as garget, cow-pox, etc. ; and it was by no means unusual to find these appearing concurrently with outbreaks of scarlatina or of diphtheria among the surrounding population, though very difficult to exclude an independent and purely human origin of the latter.

TREATMENT.—Dr. C. Smith[4] advises treating diphtheria by the continuous **Inhalation of a Vapour** composed of the following ingredients : carbolic acid, 1 ; eucalyptus oil, 1 ; and turpentine, 8 parts. Place the patient in bed and fix a tent over him by arranging a sheet. In the above mixture soak two cloths about a foot square, place one close to the face, the other on the pillow near the head, on pieces of paper to avoid unnecessary soiling of the bed clothes. In all laryngeal cases, use steam continuously in the cot. The following is reported as the latest treatment of diphtheria in the Paris hospitals[5].

Dr. Jules Simon's treatment :—

℞ Acid Salicylic,	0·60 centigrammes	Glycerine	40 grammes
Infusion Eucalyptus	60 grammes	Alcohol	15 grammes

M.

Sig.—Every two hours the following procedure is put into force : Two of Péan's long pincers are taken and the ends wrapped around with a wad of antiseptic cotton. With the first one the throat is carefully cleaned out, *without wounding the mucous membrane* ; then this solution is applied with the second one. Afterwards all the cotton used is burned and the instruments are washed in boiling water. No carbolic acid is used in these wards.

In the intervals of using this external application an irrigation of hot borated water is used freely (4 per cent. borax); if the child is old enough he can be made to gargle with this solution. A spray of

thymol solution is kept going in the room more to keep up a certain humidity than to act on the disease itself. When possible Dr. Simon advises to change the child into another room during the day, or else use inhalations of oxygen gas. Port, sherry, or any good form of alcohol is given often, and 3 to 6 drops of the perchloride of iron, in a little water, is added to the internal treatment. No milk, gummy solutions, or metal spoons, must be used when giving the iron. If the patient is five or six years old, Dr. Simon adds a preparation of cubebs and copaiba, but he does not use opium in any form.

Dr. Gaucher's treatment :—

℞	Camphor	20 grammes	Ac. Carbolic (Cryst.)	5 grammes
	Olive Oil	15 grammes	Ac. Tartaric	1 gramme
	Alcohol at 90°	10 grammes	M.	

Sig.—Dr. Gaucher used a rough brush with this solution, and does not fear to even take off the false membrane, claiming that he cauterizes it. Great care must be taken with this solution that none of it is dropped into the mouth or larnyx. This is applied every night and morning, and every two hours an irrigation of the throat is made with a 1 per cent. solution of carbolic acid. (This is a very painful treatment.)

Dr. Legroux, of Trousseau Hospital, used :—

℞	Glycerine	20 grammes	Creasote	1 gramme
	Alcohol	10 grammes	M.	

Sig.—Applied on a brush, twice a day; besides this a spray is kept going of creasote 100, to alcohol 1000.

In very serious cases M. Legroux does not hesitate to use hypodermic injections of :—

℞	Aseptic Olive Oil	150 grammes	Creasote	20 grammes

It is claimed for this treatment that it has also a preventive action on broncho-pneumonias that may succeed tracheotomy.

Dr. Legendre's treatment :—

℞	Naphthol	5 grammes	Glycerine	100 grammes
	Alcohol	5 grammes	M.	

Sig.—Used on a wad of cotton several times a day.

Also the following for irrigation :—

℞	Naphthol	0·20	Water	1000

Dr. Hutinel (at Hôpital des Enfants) :—

℞	Terpine hydrate	8 grammes	Alcohol	100 grammes
	Hydrarg. bichlor.	0·30 centigrammes	Ess. Thym.	a few drops
	Ess. Mint	100 grammes	M.	

Sig.—Used on cotton wad as the others.

This is followed by irrigations every two hours of hot borax water, and an internal treatment of 3 to 12 grammes of sodium benzoate.

Treatment by **Sulforicinated Carbolic Acid.**—This is the latest and newest form of therapeutics for this disease. Carbolic acid has

already been tried mixed with various oils and turpentine as well as camphor, but the preparation of castor oil, as made in the above pharmaceutical solution, seems to have met an indication that is of great importance in the use of carbolic acid on mucous membranes. It does not irritate the pharynx, and it is not painful; it also adheres to the mucous membranes. A solution of this kind is used :—

℞ Acid. Carbol. 10 grammes | Sodii Sulforicinat. 90 grammes
M.

This is put on wads of cotton, and when applied to the pharynx it is not washed off by gargles or irrigations, but allowed to stick to the mucous membrane and penetrate it as much as possible. Professor Grancher, Dr. Cadet de Gassicourt, and Dr. D'Heilly are now using this preparation, and much is hoped from it.

From the above it would seem that no uniform method of treatment is to be recommended for diphtheria. Infants should not be treated by the same method as adults, because certain drugs, as carbolic acid, etc., may be poisonous in the first. A combination formula in use in the Children's Hospital at Nice is varied as follows :—

℞ Glycerine 30 grammes | (or Creasote) āā 60 centigrammes
Acid Salicyl. | Alcohol q. s. to dissolve
Terpine | M.

Sig.—This is used locally.

But since the introduction of the sulforicinates the following is being tried :—

℞ Sodii Sulforicinat. 80 grammes | Creasote (or Terpine), 2 grammes
Salol 10 grammes |

Sig.—Apply to the membrane and throat every three hours.

The atmosphere of the sick-room should be kept humid with a spray. Dr. Hutinel and almost all the French physicians use boric solutions (about 3 per cent.).

Dr. Seibert[6] reports the sub-membranous local treatment of fifty cases of pharyngeal diphtheria, with four deaths. This treatment consists in injecting fresh **Chlorine Water** (U.S. Pharmacopœia), through the diphtheritic pseudo-membrane into the inflamed mucosa below; 15 drops are injected into each spot, and, according to the extension of the process, as many as six or eight injections are made in one sitting.

Dr. Bloebaum[7] recommends the local treatment of diphtheria by **Galvano-cautery.** By its use the false membrane, with its deadly bacilli, is burned off, and does not form again. No bleeding occurs, because of the astringent property of the heat. This treatment must be used early when there has been only a small portion of the deadly

poison given off by the bacilli, and it can only be useful when all the diphtheritic patches can be cauterized and thereby sterilized,—that is, when they are all confined to the tonsils, the anterior and posterior walls of the soft palate, the uvula and posterior and pharyngeal wall. The burn is powdered once or twice daily with dermatol.

Dr. Stein[8] prescribes a gargle of equal parts of **Lime Water** and **Distilled Water,** followed by a powdering of the diseased portions of the throat with a mixture of equal parts of washed **Sulphur** and **Quinine.** In rhinitis, the powder is blown down into the nose. Burghardt's blower is employed.

Dr. A. Josias[9] employs **Sulphoricinated Phenol**. This substance is composed of 20 grm. phenic acid and 80 grm. sulphoricinate of sodium. The new medicament is locally applied to the false membranes by means of a tampon that has been immersed in a solution of the strength of 20 per cent. The applications are made four times during the day, and once or twice at night. Tonic medication and good alimentation must be added.

Dr. A. Ozegowski[10] treats faucial diphtheria by painting with the following mixture every two or three hours, using a cotton wool swab : —

℞ Acid. Carbol. crystall.	Tr. Iodi āā 3 vel 5 grammes
Acid. Citrici crystall.	Cognac or fine Champagne 100

M.

Dr. Florin[11] advises a saturated solution of **Chloride of Zinc**, in the following formula : —

℞ Chloride of Zinc ʒiv	Honey, q. s. to make a thick
Yellow powder of Quinquin. ʒiv	paste

Sig.—This mixture is applied generously to the throat by means of cotton on a holder.

Dr. Bowman[12] uses a solution of **Permanganate of Potash.** 3 grains to the ounce. From three to four applications are made directly to the membrane with a large camel's hair brush every hour for eight or twelve hours. After this, the painting should be continued at from two to six hours' interval.

Dr. Baginsky[13] gets the best local results from **Corrosive Sublimate,** 1 to 3000 as a wash, and 1 to 500 dabbed on, next to it being a 3 per cent. alcoholic solution of carbolic acid, which was objectionable on account of its horrible taste. A caustic effect from any agent does harm, and is to be avoided. The ice bag is used, and ice given internally until the inflammatory infiltration of the mucous membrane has disappeared. Internally, heavy wines are employed

freely. When there is great loss of strength, cognac and subcutaneous injections of camphor in oil, and 10 per cent. alcoholic solutions are also used.

Dr. Wilhelmy[14] recommends the local application of a 20 per cent. solution of **Chloride of Zinc**, which does not affect healthy epithelium. Lumps of ice are employed, also the following gargle :—

℞	Aq. Calcis	300·0	Ol. Menth. pip.	gtt. v
	Glycerini	30·0		

Dr. Wilkowskij[15] has successfully treated thirty cases by the local application of concentrated **Salicylic Acid**. The following is the proper strength :—

℞	Salicylic Acid	0·6	Glycerine	4-8 grammes
	Alcohol	4·0		

Sig.—This is warmed and applied two or three times daily.

Dr. E. N. Smart[16] advocates the following treatment of membranous croup and laryngeal diphtheria : Give an occasional emetic of **Turpeth Mineral**, and 5 to 12 grains of **Iodide of Soda** every one, two, or three hours, according to circumstances.

Dr. F. E. Waxham[17] presents statistics of *Intubation of the Larynx*. Of the four hundred cases reported one hundred and thirty-nine recovered, or 34·75 per cent.

Drs. Prescott and Goldthwait[18] report three hundred and ninety-two cases of **Intubation** with a mortality of 79·59 per cent, and one hundred and thirty nine cases of **Tracheotomy** with a mortality of 88·5 per cent. The results depend more upon the nature of the epidemic than upon the operation.

Soupault[19] advises the administration of **Creasote** in tracheotomized cases as a preventive of broncho-pneumonia. The formula is as follows :—

℞	Glycerini	500 grammes	Creasoti	10 grammes
	Rum	100 ,,		

Sig.—2 teaspoonsful of this mixture are given as a dose to young children, the dose being gradually increased to 4 teaspoonsful for children five years of age.

After tracheotomy, cover the opening of the cannula with a small pledget of cotton (absorbent) moistened with the following mixture :—

℞	Glycerini	20 grammes	Creasoti	1 gramme
	Alcohol	10 ,,		

References.—[1]"Arch. Pediatrics," Sept. 1892 ; [2]Ibid., Sept. 1892 ; [3]"Brit. Med. Journ.," Jan. 30, 1892 ; [4]"Pract.," 1891, xlvii, 430 ; [5]Correspondence, "Arch. of Pediatrics," March, 1892 ; [6]"Ibid., Feb. 1892 ; [7]"Deut. Med. Zeit.," Jan. 1892 ; [8]"Therap. Monats.," April 1892 ; [9]"La Med. Moderne," April 28, 1892 ; [10]"Nowiny Lekarskie,"

March, 1892 ; [11] "La Pratique Méd.," 6 Année, No. 21 ; [12] "Australian Med. Gaz.," Feb. 1892 ; [13] "Arch. f. Kinderh.," Bd. xiv., 1891 ; [14] "Deut. med. Woch.," 1892, No. 5 ; [15] "Wratsch," 1891, No. 35 ; [16] "Omaha Clinic.," 1892, v. 10 ; [17] "Arch. Pediatrics," July 1892 ; [18] "Boston Med and Surg. Journ.," 1881, cxxv., 694 ; [19] "Rev. des Mal. de l'Enf.," Sept. 1891.

Synopsis.—(Vol. 1892, p. 183.) Löeffler's experiments with diphtheria bacilli led him to advise gargles of **Corrosive Sublimate** 1 to 10,000 or 15,000 ; **Cyanide of Mercury** 1 to 8,000 or 10,000 ; **Chloroform Water** ; **Chlorine Water** 1 to 1,100 ; **Thymol** 1 to 500, with 20 per cent. in volume of Alcohol. These should be used every three or four hours as prophylactics by nurses, etc., and for patients every hour or two, and local applications at equal intervals of **Carbolic Acid** 1 to 20, **Bromine** 1 to 50, or **Chlorine** 1 to 100. For inhalation, **Essence of Lemon, Oil of Eucalyptus, Anisol, Phenetol, Benzol** or **Toluol** may be used, and metallic tubes containing cotton impregnated with the remedy may be introduced into the nasal fossæ. Radcliffe uses disinfectants locally as spray, but if the disease is stubborn he gives **Sodium Sulpho-carbolate**, 3- to 5-grain doses, at short intervals according to age, and begins at once with brandy or whisky, which is constantly used all through to the end. Lloyd advises **Chloride of Ammonium** instead of **Chlorate of Potassium**. It may be mixed with **Tinc. Ferr. Chlor.**, or ℞ Ammon. Chlor., Tinc. Ferr. Chlorid āā ʒss, Syr. Tolu ʒj. A teaspoonful every two hours, using also a soft camel's hair brush to apply the mixture locally.

Beyer applies a mixture of **Methyl Blue** 2 parts, **Powdered Sugar** 98 parts, and **Acetanilide** in small doses to control fever. Abadie recommends **Lime Juice** applied every five hours for diphtheritic conjunctivitis. Mayer advises application of **Ice** to the neck, and gives it freely internally. Wolf applies **Menthol** rubbed up with sugar, 1 or 2 parts to 20 ; the powder is applied with a camel's hair pencil. Rosenzweig injects **Strychnine** ·003 gram. into the back of the neck for palatine paralysis following diphtheria, repeating the dose a few times. Schwitzer uses the **Empyreumatic Oil** from tobacco pipes, 2 to 2½ parts digested in 35 to 40 parts alcohol and filtered. It is applied with a brush, and an infusion of **Tobacco Leaves** 2 parts to 200 of water is also used as a gargle. Hubbard exposes the patient to the fumes of heated **Hydrochlorate of Ammonium** for fifteen minutes, repeating it each hour.

Betz employed **Etherization** in croup, by means of a mixture of **Sulphuric Ether** 3 parts, **Acetic Ether** 1 part, **Menthol** 1/10th part : 3 drops were inhaled every quarter-of-an-hour by an infant thirteen months old, with relief. Law advises **Mercurial Fumigation** for pseudo-membranous laryngitis, volatilising 30 grains of **Calomel** at a time. Kellerer successfully used inhalations of **Pyoktanin**, 0·05 to 100·0 water.

Seibert has constructed a syringe for sub-membranous injection of the officinal **Chlorine Water** (U.S.P.), thus destroying the bacilli in the lower stratum of the mucosa.

DISLOCATIONS. *F. S. Eve, F.R.C.S.*

Dr. L. S. Stimson reports eight cases of irreducible dislocation of the elbow, which were "reduced by open arthrotomy." In all but one case the dislocation was backward ; in one it was backward and outward, the coronoid process lying close under and behind the

capitellum. The dislocation had lasted in one case only three weeks ; in another, five weeks and a half ; in three, two months ; in two, five months ; in one, about three months. In all, flexion and extension were entirely or almost entirely lost ; and in most of them the limb was fixed at an angle of about 145°. Rotation of the forearm was preserved in all but one.

The method of operation in all the cases but the first was to expose the region by two lateral incisions. The first incision was made on the outer side, beginning well up on the supinator ridge and passing downward across the head of the radius, and then for an inch or two along the interval between the radius and ulna ; the new growth of bone is exposed at the upper part of the incision, denuded, and cut away with a chisel ; the outer aspect of the external condyle is freed by division of the fibrous attachments to the radius and ulna, the periosteum not being detached until the articular surface of the capitellum is exposed. Drawing apart the sides of the upper portion of the wound, the olecranon is exposed, and the fibrous mass, which more or less completely fills its sigmoid cavity and binds it to the back of the humerus, is cut away. The second incision is made on the inner side ; it is about four inches long, curved (the concavity forward), and passes close behind the epicondyle (or its site if it has been broken off) ; after division of the fascia and recognition of the ulnar nerve, the latter is drawn aside in the outer flap of the wound, and the fibrous bands connecting the condyle and olecranon are divided. If the epicondyle has been broken off, displaced upward, and reunited with the humerus at a higher level, it should be cut free and turned back, with the attached internal lateral ligament, instead of dividing the latter. The division of the attachments is carried downwards until the articular surface of the trochlea is exposed. The dislocation can then be easily reduced.

After the removal of the dressing the patient is encouraged to use the hand, and ultimately the elbow, in acts that require the exercise of but little force. Passive motion has not been employed.

With the exception of the first case, in which the operative method was faulty and the dislocation recurred unrecognized under the dressing, the results have been satisfactory to this extent : the bones have been permanently restored to their places and the deformity corrected, and more or less freedom of motion has been regained ; in all, rotation of the forearm was preserved ; in three, the range of flexion and extension was from well within a right angle to nearly complete extension.

REFERENCE.—"New York Med. Journ.," October 24, 1891.

DYSENTERY.

Alexander Crombie, M.D., Calcutta.

The term amœbic dysentery has now assumed a recognized position in medical literature, and is used to describe those cases of dysentery in which the amœba (the amœba coli) is found in the mucus of the stools, in the dysenteric ulcers, or burrowing in the tissues around them. But a certain amount of caution in granting a position to the amœba as a causative agent in the phenomena of dysentery is rendered necessary by the fact that amœbæ, as well as a considerable number of infusorial organisms of different kinds, inhabit the normal human bowel, and as was shown by Cunningham many years ago, can often be demonstrated in apparently perfectly healthy human excrement, and absolutely swarm in that of Indian cows. The latter remains alkaline for many days in a moist chamber, and is therefore very favourable for the existence and multiplication of these low forms of life, whereas human excrement rapidly undergoes acid fermentative changes which are inimical to them. But if the precaution of neutralizing this acidity be taken, their presence can frequently be demonstrated. The evacuations of dysentery are always alkaline like those of cows, and the question naturally arises as to the possibility of the frequent presence of the living amœba in the stools, etc., of dysenteric patients being due to their finding that abnormal state more favourable to their existence, growth and development, than the healthy conditions of the human bowel.

However that may be, it seems certain that all cases of dysentery are not equally characterized by the presence of the amœba, so that the term amœbic dysentery would appear to be justified on the mere ground of marking a distinction in the nature of the cases included in the general name. Those cases of dysentery which are characterized by the presence of amœbic forms would appear to offer distinct clinical features, from the catarrhal (and so called) diphtheritic forms of the disease, in which the presence of the amœba is not demonstrable. Dr. Drayton Ball has very clearly pointed out in what these differences consist. In acute catarrhal dysentery, the most common form in India, the stools are small, frequent, and consist of rosy mucus mixed with blood, and later of pus-detritus and occasional scybala, and are accompanied by tenesmus and tormina; they contain no sloughs, and have usually little offensive odour. There is a natural tendency to recovery under any judicious, or no treatment, within a week or ten days, the severer cases running on to three or four weeks. In acute "diphtheritic" dysentery the evacuations are thin, reddish (like meat washings), and have a pronounced cadaveric odour. Later, sloughs of the mucosa, and even entire casts of the intestine, may be discharged.

The stools are then brown or blackish, and horribly offensive. Tormina and tenesmus, both rectal and vesical, are well marked. The duration is one to four weeks. In amœbic dysentery, according to Councilman and Lafleur, there are frequent bloody mucous stools with tenesmus and tormina, and any of the symptoms of the diphtheritic variety may be added, including much adynamia and gangrenous conditions of the evacuations; but the most characteristic feature of amœbic dysentery is want of continuity of the symptoms, with periods of intermission, followed by acute exacerbations. There is a marked tendency to chronicity and secondary complications, especially hepatic abscess. Amœbæ are found in all varieties of the discharges, being most numerous in severe acute cases. They are best seen if the motions be passed into a warm bed-pan and examined at once.

TREATMENT.—As regards treatment there is evidence, even in India, which has been hitherto the stronghold of **Ipecacuanha**, of a revulsion of feeling against its routine use in dysentery. It must be obvious that in a large proportion of cases of acute catarrhal dysentery, a condition which normally ends in recovery in a week, active medicinal treatment of any kind is uncalled for, and unjustified unless it can be shown that it materially shortens that period. Hitherto there has been no attempt at classification of cases in reports on the effects of treatment, and consequently there are no data on which to form an opinion whether ipecacuanha does so or not. In mixed cases, including all three forms of dysentery, the average duration of treatment by ipecacuanha, according to Maclean, is nine days. In a recent trial made with **Ipecacuanha sine Emetina** in cases of acute catarrhal dysentery only, it was found that distinct improvement followed after an average treatment of 3·3 days, but another simultaneous series of cases treated with 1 or 2 doses of **Dover's Powder** daily showed an equal improvement after an average treatment of three days, and a single case of the same kind treated with scruple doses of ordinary ipecacuanha on the orthodox plan after two days. Walsh publishes twenty cases of this kind treated with **Emetin Mercuric Iodide,** in which the average duration of the characteristic dysenteric stools was 4·9 days, and another similar series of ten cases treated with **Holarrhena Antidysenterica** (koorchee or indrajau), in which the figure was 5·7 days. He quotes Owen's experience at Port Blair, who treated one hundred and fifty cases with **Tincture of Aconite,** for an average period of 4·05 days. Leahy in a series of ninety-five cases (not classified) treated with a saturated solution of **Magnesia Sulphate** every hour, obtained feculent evacuations after about two days' treatment. It is evident, therefore, that no pre-eminent usefulness can be claimed for

ipecacuanha in dysentery of this nature, and it is probable that the rest in bed, and the milk diet employed in all these cases, had more to do with the rapid recoveries than any specific treatment to which they were subjected.

It is to be hoped that in future reports of treatment, not only the drug used, but also the character of the case will be noted, in order that similar data may be obtained from the treatment of the more severe forms of dysentery.

Johnson strongly recommends the use of antiseptic rectal and colon irrigation in the treatment of acute dysentery. He points out that the spasm of the sphincter ani prevents the escape of the foul ill-smelling contents of the lower bowel, and quotes a number of cases in which immediate relief was given to the symptoms by irrigation of the rectum with warm water alone, or weak antiseptic lotions. The paper is an excellent one, and well repays perusal. All that is needed is a fountain or Davidson's syringe, attached to a small rubber tube or large silk catheter, an escape tube of large size of soft rubber made long enough for the fluid to be carried to a vessel on the floor. Even cases where the ulceration is beyond the immediate reach of the irrigation are benefited by this treatment, but in the severe forms of the disease, in which the ulcers extend up into the further parts of the colon, the attempt should be made to carry the tube into or through the sigmoid flexure for higher injection. If the patient is placed on his left side with his hips raised, a gentle current may pass from a raised fountain syringe into the colon, even if the point of the tube has not passed beyond the first curve of the "flexure." Any antiseptic may be used. At the military hospital at Oran fifty-three cases were so treated with 1 in 5000 **Bichloride Solution.** Improvement followed after the first day, and the mucus disappeared in three or four days, with speedy lessening of pain and tenesmus. Lemoine treated fifty-four cases with injection of the same solution with similar results, the cases being cured in from one to three days. No systemic poisoning followed in any case. Johnson himself uses only **Boric,** and **Carbolic Acid,** giving the preference to the former on account of its being the least irritating and dangerous of our germicides. Lardier and Pernet found similar results follow the use of warm **Boracic Acid** enemata, but they administered also capsules containing ¼ of a grain of **Iodoform** and ¼ of a grain of **Opium** five or six times during the day. They preferred this to salol, which also gave good results.

Dr. E. Gruet advocates in "Le Bulletin de Thérapeutique Médicale" the use of **Sulphate of Sodium,** in preference to ipecacuanha and calomel, for two reasons: It is absolutely innocuous, and it is

always well borne. But used by itself, it is subject to two objections: It is slow in its action, and it proves insufficient in certain forms of the disease. Associated, however, with intestinal antiseptics, it becomes the important factor, capable to cure efficaciously and sufficiently rapidly the immense majority, if not all the cases of acute dysentery met with in temperate and even in warmer climates.

REFERENCES.—Walsh, "Indian Med. Gaz.," Sept., 1891; Johnson, "American Journ. of Med. Sciences," Aug., 1892; Lardier & Pernet, "Lancet," March 19, 1892; Ball, "Therapeutic Gaz.," July, 1892; Cunningham, "Quar. Journ. of Microscopic Science," No. 21, 1881.

Synopsis.—(Vol. 1892, p. 194.) Leahy advises **Sulphate of Magnesia**, taking sufficient to saturate 7 fluid ounces of water, and to this is added 1 ounce diluted **Sulphuric Acid**. A tablespoonful every hour or two is given in a wineglassful of water until it operates. **Sulphate of Morphine** may be combined with it, or **Starch Enemata** with **Laudanum** may be given. When the stools become normal in colour, and only two or three are passed during twenty-four hours, an ordinary astringent mixture of acid with **Laudanum** or **Tincture of Indian Hemp**, or a pill containing **Extract of Opium**, is usually sufficient to complete the cure.

DYSMENORRHŒA.

Synopsis.—(Vol. 1892, p. 197.) In acute inflammatory form, **Fomentations, Counter-irritations, Potassium Iodide** and **Mercury**, and later, **Saline Laxatives** are most effective to deplete the gorged pelvic vessels.

For membranous dysmenorrhœa pain may be relieved by **Dilatation**, and internally **Guaiacum, Sulphur, Antipyrin** and **Castoreum** have been of service. Temporary relief has followed **Curetting** the uterus shortly before a menstrual period. For spasmodic dysmenorrhœa, healthy exercise, regulation of the bowels by salines, and simple wholesome diet should be enjoined in the intervals. During the pain the patient should rest. **Guaiacum, Sulphur** and **Castoreum** may be useful, the last being given in 20 drop doses three or four times a day, with or without a few drops of **Nux Vomica**. **Dilatation** is the last resort, and is generally contra-indicated if any signs of pelvic inflammation exist. Where palpitation is a prominent feature, **Tincture of Cactus**, 1 to 5 minims, is often useful (p. 24), **Gelsemium Tincture**, 5 to 10 drops (p. 45), **Hydrastis Tincture** (p. 50).

DYSPEPSIA (See also "Digestion: Its Pathology and Therapeutics.")

Prof. Dujardin-Beaumetz, M.D., Paris.

I wish to draw attention to a series of very simple proceedings which will enable us to gain a knowledge of the chemical changes which take place in the stomach, without making an examination of the gastric juice, which is often a matter of difficulty. These means are three in number:—

(1,) The use of an experimental meal.

(2,) The examination of the gastric and intestinal gases.

(3,) The examination of the fæces.

But before explaining these proceedings and the indications to

which they may lead, I propose here to give a brief *résumé* of the main lines of treatment, which I adopt in cases of gastro-intestinal dyspepsia.

Dyspepsia, whether it be caused by a deficiency of certain chemical changes in the stomach and intestine, by want of functional power or by neuralgia of the nerves of these organs, may be divided into two large groups, *Irritative dyspepsia* and *Atonic dyspepsia*. The first group is characterized by hyperchlorhydria, cramps, vomiting, pain, and diarrhœa. The second group on the contrary by achlorhydria, paresis of the muscular coat, putridity, and lastly, constipation. This class of dyspepsia is rarely painful.

In order to cure these cases of dyspepsia, I advise in both these groups a certain diet, the use of baths, and antiseptic cachets. The diet should be a vegetarian one, *i.e.*, it should be composed of eggs, farinaceous food, green vegetables and fruit. The severity of this regimen must be in proportion to the intensity of the dyspeptic symptoms. In very severe cases, only milk and eggs ought to be allowed. In cases of medium severity, I add starchy food, green vegetables and boiled fruit, and lastly in cases of a milder type, I allow meat, well done, and meat jellies.

As for baths, they may be used in all cases, either in the form of cold douches, or Scottish douches, or as warm, alcoholic lotions.

Respecting the medicinal cachets, they may contain various drugs. For instance, in cases where diarrhœa is present :—

℞ Salol | Cretæ Præparatæ, āā 10 grammes
Bismuth Salicyl. | (2½ drachms)

Sig.—To be made up into 30 cachets.

In cases where constipation is a symptom :—

℞ Salol | Sod. Bicarb. āā 10 grammes
Benzonaphthol |

Sig.—To be made up into 30 cachets.

In cases where there is a great deal of flatulence :—

℞ Benzonaphthol | Hydr. Magn. āā 10 grammes
Bismuth Salicyl. |

Sig.—To be made up into 30 cachets.

I omit here the salol because of the disagreeable and persistent odour with which this medicine pervades the eructations.

Having disposed of these preliminaries, I pass on at once to an examination of the proceedings above mentioned.

The Experimental Repast.—This ought to be taken fasting in the morning, and every day at the same hour. It ought to be composed of the same kinds of food, either "*café au lait*" or "*thé au lait*" with a "crescent roll" (*croissant*) and butter, or no butter, according to the taste of the patients.

The quantity of these food stuffs should always be the same.

If it does not interfere with the function of the stomach, well and good. If, on the contrary, functional troubles of that organ set in, it gives rise to a series of symptoms varying according to whether there be irritation of the stomach or atony of the organ. If irritation be present, there is a sensation of warmth, then of burning, with acid eructations. In a severe case there are real cramps, more or less painful. In cases of still greater severity, vomiting supervenes.

In atonic dyspepsia there are first of all eructations having occasionally a very disagreeable odour, then a sensation of a heavy weight, which persists for a longer or shorter time.

In both these forms of dyspepsia, intestinal troubles are produced, three, four, or several hours after the ingestion of the experimental repast, and these I shall explain more fully presently.

When such symptoms are produced after the morning meal, either in cases of irritative dyspepsia or of atonic dyspepsia, it means that the patient should observe the greatest caution as regards the other meals, *i.e.*, luncheon and dinner.

He ought to banish meat from his repasts and confine himself to eggs, carbo-hydrates and vegetables. If he is accustomed to drink milk, he ought to have some with his meals, or he may substitute aërated alkaline water, either by itself, or with the addition of a little white wine, or extract of malt.

He ought also to take with the other meals one of the cachets above mentioned, according to the kind of dyspepsia from which he suffers.

If, on the other hand, this first meal in the morning, which we have called the experimental repast, has been partaken of without the least inconvenience, the patient can do without the cachets, and allow more latitude in choosing his diet.

It is easy to understand the utility of this first meal, and every intelligent dyspeptic patient, ought with his doctor's guidance to be able to regulate his diet and his medicines according to the signs furnished by the result of the experimental repast.

The Gastro-intestinal Gases and the Fæces.—An examination of the gases and the fæces will give information equally important to the dyspeptic patients.

The gases generated in the stomach will, by their odour of putridity, or of acidity, as the case may be, enable us to form an opinion as to the presence of atony or irritability of the stomach.

As to the intestinal gases, their odour and abundance give us valuable information. The intestinal gases have sometimes an odour of

putridity of great intensity and persistence, strongly reminding one of the odour of gangrene. Here is one of the most characteristic signs of intestinal putridity, and it is in these cases that one must prescribe **Salicylate of Bismuth** or **Salol.**

As regards the fæces, they are of the very greatest importance, and it is highly desirable that all our houses should be fitted up with water closets of the kinds used in England, which allow of separation between solids and liquids.

In a great number of dyspeptic cases, and particularly in gastric dyspepsia accompanied by diarrhœa, the fæces look greasy and have a putrid odour, different from that of healthy fæces.

In irritative dyspepsia with hyperchlorhydria the fæces are characterized by another important feature, viz., their acidity.

It is well known that healthy fæces are alkaline; but they may become neutral and even acid, which can easily be demonstrated by the use of turmeric paper. This acidity is due to the following fact: the hyperchlorhydria of the stomach is such that when the chyme has passed over the ampulla of Vaters, the bile and the pancreatic juice are insufficient to neutralize it, and as the digestion in the intestine can be carried on only in an alkaline medium, two classes of phenomena may be observed as results.

On the one hand, an incomplete intestinal digestion with colic and borborygmus; on the other hand, acid fæces. These acid fæces irritate, by their presence, the larger intestine which expels them more or less promptly; hence, frequent stools, the passage of which is accompanied by heat and burning at the anus.

Just as in the case of the experimental repast, these signs may guide the dyspeptic patient; and whether the case be one of constipation, diarrhœa or acid fæces, he can easily regulate the treatment.

In the diet which I have adopted in cases of dyspepsia, I do not allow game, fish, molluscæ, shell fish, cabbage, because in the largest number of my patients these food-stuffs produce intestinal troubles, and particularly gases and putrid stools.

These remarks hold good in all cases which I have just related.

Such are the short remarks which I would like to make on the subject of these small proceedings, which, in practice, present a real interest.

Synopsis.—(Vol. 1892, p. 200.) In patients of the "rheumatoid diathesis," also those with dilated atonic stomachs allowing fermentation, in neurotic and anæmic girls, old men with enfeebled gastric powers, and the anæmic residents in tropical climates, **Mineral Acids** are useful, *e.g.* ℞ Ac. Sulphuric (pure) 28 parts, Ac. Nitric (pure) 8 parts, Spt. Vini (80 %) 180 parts. Mix by weight gradually in ice. Sig.—20 drops after meals, in water, wine, or beer.

Sée employs **Cannabis Indica** ¾ gr. dose of a fatty extract thrice daily, in a solution in gastric neuroses and dyspeptic cases due to hyperacidity, combining it in the latter condition with large doses of **Sodium Carbonate**, given towards the end of gastric digestion.

Cséri's plan consists of **Suitable Dieting**, together with **Massage** two or three hours after dinner, kneading the stomach from the fundus to the pylorus for ten or fifteen minutes. In irritative dyspepsia, Aulde gives ℞ Liq. Potassii Arsenitis gtt. 36, Syr. Pruni. Virg. ℥ij, Infus. Gent. q.s. ad ℥iij. M. Sig.—1 teaspoonful after meals (p. 18).

EAR (Diseases of). *J. Dundas Grant, M.D., F.R.C.S.*

I.—External Ear.

Outstanding Ears.—In extreme cases not yielding to the ordinary methods of treatment, Mr. A. H. Tubby[1] recommends that the following steps should be taken in preference to merely stitching the opposed surfaces of skin together, since this plan causes considerable after-discomfort, and is often ineffectual and disappointing. "An elliptical piece of skin, with its long axis vertical, is removed partly from the skin behind the auricle, and partly from its posterior surface, the breadth of the removed portion not exceeding one to one and a half inches, according to the size of the ear and the extent of the deformity. Then completely divide the cartilage of the concha at its most prominent part, taking care not to buttonhole the skin. Two or three deep sutures are then passed through the skin beneath the surface of the wound. When these are tightened the auricle lies closely to the side of the head, without the continued disfigurement of a doubled-over auricle."

Foreign Bodies—There is little to add to the statements made in the "Annual" of the last and preceding years on this subject. Dr. Menière[2] has, however, published a case illustrating a very interesting source of fallacy. A young lady became deaf after bathing in a rough sea. The surgeons who examined her ear in search of a foreign body found nothing beyond an extreme opacity of the membrana tympani. The case came under Dr. Menière, who thought the appearance rather unusual, applied a probe and detected a hard foreign body. On further inspection he observed an upper marginal line, and by means of a strong syringe removed a small shell which had simulated an opaque concave membrane.

Furuncle of the External Ear.—We have in previous years drawn attention to the use of morphinated gelatine cones of **Cocaine** and of **Menthol.** In the recent edition of his work, St. John Roosa[3] dwells upon the beneficial effects of continuous warm bathing of the meatus by means of a siphon ear-douche fitting into the meatus like a speculum, and having an influx and efflux tube. Leeches applied to

the tragus are also advised. The propriety of *incision* is hardly questioned, and the time for it he states is when there is a formation of pus.

The editor of this article has devised a knife by means of which the incision of aural furuncles is greatly facilitated. It consists of a steel stem at the extremity of which is a small curved, sharp-pointed blade (*Fig.* 5), the edge and point of which are directed towards the operator

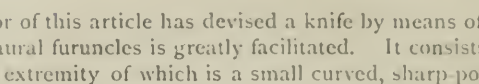

Fig. 5.—Dundas Grant's Furuncle Knife.

This can be pushed beyond the furuncle and made to cut it *from within outwards* with the utmost safety and rapidity. He has used it in many cases under cocaine or **Nitrous Oxide** anæsthesia, and has found the manipulation extremely easy, and the relief given most marked.

In a paper on the Treatment of Aural Pain, Dr. Seiss [4] refers to the various causes of this symptom, which is so marked in cases of furuncle. He enumerates eczema, furuncles, diffuse inflammation of the meatus, foreign bodies, acute middle ear catarrh (myringitis, acute tympanic catarrh, and acute Eustachian salpingitis) acute purulent otitis, complications of chronic purulent otorrhœa, pure neuralgia of the ear, and otalgia from disease of the teeth. [The differentiation of these conditions is not difficult *if the enumeration be kept in mind*, but any of them may easily be overlooked if not thought of at the time. We would add to the list the pain reflected to the ear in acute and malignant disease in the neighbourhood of the throat.— Ed.]

Bony Growths in the Meatus.—Prof. Pritchard[5] divides these into exostoses and hyperostoses, as described by Cassells.

Exostoses are of three kinds : (1,) Multiple ; uniform, smooth and rounded, pale and glistening on the surface, even denser than ivory in consistence. These should not be operated on unless there is a tendency to complete occlusion ; (2,) Irregular in shape, of pale pinkish hue and dull appearance, with broad bases and of great density. These should be removed if there is any danger of occlusion, and if there is persistent otorrhœa ; (3.) Single polypoid exostoses not uniformly of ivory-like density, but having a bony pedicle. These may be removed without delay. A dental elevator or stump forceps may be used for the last class, a trephine worked by a dental engine for the others.

Hyperostoses are large uniform osseous swellings of the side of the meatus. [The usual cause of annoyance to the patient in these cases is the accumulation of cerumen or epithelial *débris* at or behind the isthmus formed by the growth. This may from time to time be

entirely relieved by the gentle and skilful interference of the surgeon The use of a curette and of a syringe with a fine soft point (Messrs. Down, of London, supply a very fine one, *Fig.* 6), preceded by

Fig. 6.—Down's Tube.

the instillation of soda and diluted glycerine drops, and followed by careful drying by means of absorbent wool, will in most cases restore both comfort and function. It has to be remembered that the rate of growth of exostoses is often extremely—almost immeasurably—slow, and that the smallest passage is sufficient for the transmission of air-vibrations to the tympanum. There is, however, greatly increased danger if by any mischance acute septic middle ear inflammation occurs in the presence of these growths. The bearers of them cannot therefore be too urgently warned against incurring the risk of such a complication from sea-bathing, exposure to cold, use of nasal douche, or submission to injudicious intra-nasal operation.—Ed.]

Ceruminal Accumulations producing General Symptoms. — Dr. Aitken[6] publishes three cases illustrating this point. A little girl with cough and emaciation suggesting pulmonary phthisis, an old gentleman suffering from dreadful nervousness, with restlessness and disordered digestion, and a young girl with chronic pyrexia and family history of phthisis were entirely cured by the removal of ceruminal plugs from their ears. In the old gentleman only was deafness complained of. [In previous issues we cited cases of similar significance, reported by Mr. Percy Jakins, and by Dr. Walker Downie.]

Syringing in Ear-diseases.—Bing[7] expresses preference for the universal use of the syringe over that of absorbent wool pellets for cleansing purposes. (Some other writers, and notably Dr. Albert Buck, have pointed out the undoubted fact that syringing the meatus produces greater congestion of the tympanic membrane than the gentle use of cotton-wool.) He is averse to the addition of antiseptics, holding that they are irritating if strong enough to have any value, and most injurious if from their nature they are suspended (however finely) instead of being thoroughly and uniformly dissolved. The ordinary syringe has often to be supplemented by a long fine cannula attached to its tip, or better by one of Weber-Liel's tympanic catheters connected to it by a long tube. He insists strongly on the need of gentleness in driving a stream against the fragile and sensitive structures of the ear. [The editor remembers a case in which the force required for the extrusion of a hard ceruminal plug was such as to cause extreme deafness—concussion of the labyrinth—lasting

several months. He now always separates the upper part of the plug from the roof of the meatus by the careful use of a blunt spud, but to the inexperienced he would recommend a preliminary softening of the mass by means of soda and glycerine drops.]

A Modified Ear-syringe. — The editor would apply the term "improved" to the syringe he now uses and recommends, had the modification not been of his own devising. In this syringe (*vide Fig.* 7), the tip, which is very fine, has between it and the cylinder a

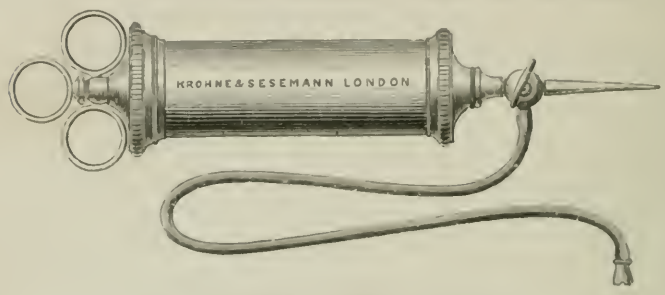

Fig. 7.—Dundas Grant's Modified Ear-syringe.

two-way tap by which the latter can be put in communication with a lateral tube of wide bore so that the fluid can be rapidly drawn into the instrument. The advantages are the following: (1,) Much time is saved, as the lateral tube is of wide bore. (It must be painfully familiar to all how long it takes to fill a large syringe through a narrow tip); (2,) The risks attendant on the possibility of sucking infectious matter through the syringe tip in the course of treating a septic ear are avoided; (3,) Any adjunct to the syringe, such as Hartmann's intra-tympanic catheter or other tube, does not require to be detached during the process of filling.

II.—Middle Ear.

Abuse of Politzer Inflation in the Treatment of Ear-disease.—This invaluable method, or one of its equivalents, forms unquestionably the chief stock-in-trade of most practical aurists. Judicious practitioners are no doubt aware, either from foresight or from observation, that its use can be over-done to the serious detriment of patients. Prof. Bürkner[8] gives the question grave consideration, and goes the length of restricting its use almost exclusively to cases of suppuration, and of non-sclerotic catarrh, especially as it occurs in children. He notes the tendency that there is for the air to pass into the normal or less diseased of the two ears in cases of sclerosis, and the consequent

injurious effect. He particularly deprecates entrusting the "Politzer-bag" to the hands of the patient who, however suitable it may be in moderation for his own case, is very likely to pass it on to others for whom it may be absolutely unsuitable, and even injurious, as in ceruminal occlusion, labyrinthine disease, or middle-ear sclerosis.

To limit the full blast, to a considerable extent, to the desired ear, the editor has habitually insisted on the patient firmly plugging *the other ear* by pushing the tragus well into the meatus by means of the finger. This instruction is given to all to whom the *Eustachian self-inflator*, described in last year's "Annual," is recommended, with the further direction to use the minimum of expiratory force requisite to "go to the ears." This latter point is, the editor believes, answerable for the not infrequent benefit derived from its use, when Politzerization, probably from over-distending the tympanum, seemed to have an injurious rather than a beneficial effect.

Loewenberg's[9] warning against the over-use of inflation is quite in accord with what Prof. Bürkner advances. He considers that excess of pressure even in the worse of two sclerotic ears is injurious, and he mitigates the effect of this intra-tympanic blast by attaching to the "Politzer-bag" a second tube with a tip fitting into the external meatus. Air is driven into this as well as into the tympanum.

(In many cases of chronic middle ear catarrh there is a tendency to thinning and relaxation of the membrana tympani with consequent collapse under the slightest diminution of intra-tympanic pressure. This condition, if not caused, is at all events exaggerated, by the too frequent and injudicious use of Politzer's inflation. Cases have been referred to the editor on account of intractable deafness for which the general practitioner asserted, with conscious pride, he had practised Politzerization with regularity. The revelation, by means of Siegel's speculum, of a highly relaxed condition of the membrane explained the inefficiency of this otherwise invaluable process.)

Treatment of Attic Suppuration by Excision of the Auditory Ossicles.—Among our cases of chronic suppuration of the middle ear, and especially among those which resist ordinary antiseptic treatment, will be found a number in which, with an offensive discharge, there is a perforation in the membrana flaccida. This perforation may be plainly visible and discharging, or it may be concealed by a crust. Often there projects from it a granulation, and a probe passed into the opening may impinge on diseased bone.

Dr. Milligan[10] found "attic" suppuration twelve times in three hundred and seventy five cases. This is a greater frequency than would be expected, but a competent and candid observer has found

that perforations in the membrana flaccida are considerably more frequent in private than hospital practice, due, he supposes, to the greater care with which private cases are examined. He draws from this the deduction that attic suppuration would be more frequently observed if more carefully looked for. Dr. Milligan is inclined to reject Walb's theory that attic suppuration originates from the extension of an external otitis through a "foramen of Rivini." He insists on the importance of eradicating the disease in view of the proximity of the base of the brain, the antrum and the lateral sinus. In the treatment of these cases he considers the ordinary drops, lotions and powders (as generally employed for chronic middle ear suppuration) useless, and irrigation, by means of Blake's or Hartmann's instruments, only at times successful. The operation of excising one or more ossicles and the remaining portions of the tympanic membrane is indicated: (1,) In chronic purulency of the middle ear, with caries of the ossicles; (2,) In cases of the presence of cholesteatomata in the tympanic cavity. The operation is best performed under a general anæsthetic, and with good forehead illumination. *To favour asepsis*, the ear should be previously irrigated with **Carbolic** or **Boracic Lotion,** several times daily, the auricle scrubbed with turpentine or ether, and kept covered with a carbolized towel. *To diminish hæmorrhage*, a 20 per cent. solution of cocaine should be kept in the external meatus for five minutes before the operation. (*To prevent the patient slipping*, if operated on in the sitting posture, the method devised by the editor, and described on p. 206, may be adopted.) The membrane is separated from its attachment by a circular incision, the tensor tympani and superior ligament of the malleus are divided, the malleo-incudal joint is severed by means of a curved knife, and the malleus is removed by means of forceps or snare. If the incus is to be removed (it is relatively very frequently diseased), it must be drawn down and detached from the stapes. The ear is then irrigated with **Boracic Lotion, Iodoform** is insufflated, and the meatus packed with iodoform wool. (**Europhen,** though somewhat feebler than iodoform as an antiseptic, may be used in its stead, on account of its marked hæmostatic properties.) The dressings must be changed when they become moist.

Dr. Milligan describes four illustrative cases, and in them (as in the majority) a new membrane formed. So notable is this tendency that Richardson[11] has amended the operation, in his practice, by leaving the membrane, and extracting the diseased ossicles through a vertical incision running down the front and back of the manubrium mallei. He professes that in this way he gets quicker healing, and equally good results, as regards purulency and auditory function. Sexton is

a strong advocate of the operation first described, and in order to diminish the risk of injury to the chorda tympani, he advises that the incus should be removed before the malleus.

Perforation of the Mastoid for Middle Ear Disease.—Dr. Black,[13] of Edinburgh, prefers to the chisel or gouge, and to the trephine, the use of "a gimlet with a small point, and the diameter, for children, of the screw of about one-sixth of an inch. This is inserted in the bare bone, and slowly turned by the hand till the cavity is reached. When this occurs, use is made of a cone-shaped burr, in order to enlarge the opening."

Gruening[14] makes a much freer opening. After a large incision "the periosteum is lifted from the whole extent of the mastoid process, and the tendinous attachments of sterno-cleido-mastoid muscle are severed." The outer surface of the bone is thus completely exposed, and, if found diseased and softened, is opened with a sharp spoon at the point affected. If the bone is found firm and apparently healthy, the opening "is made with chisel and mallet on a level with the spina supra meatum." The next step is "the removal of the whole cortex by means of the bone forceps or rongeur." "Removal of the cortex brings into view a number of cavities filled with granulation tissue, for the dislodgment of which the sharp spoon is used. These small cavities are thus generally converted into one large single one, whose bony walls may be found softened in many spots. Again the sharp spoon is used to clear away the softened and diseased bone. Now the large cavity thus made can be fully explored, and the site of the lateral sinus and its relation to the antrum determined." "After the operation the cavity is packed with iodoform gauze, and a bandage applied."

[In cases in which there is obviously pus near the cortex of the mastoid, Dr. Black's process is eminently commendable on the score of facility and safety, and there is a large scope for its employment. When, on the other hand, the opening of the antrum has to be made through a normal or sclerosed mastoid the case is very different, and the truly cautious surgeon will feel greater confidence in the operation in which the field, although more extensive, is fully open to view.—Ed.]

Mr. Arbuthnot Lane[15] describes the operation which he terms "antrectomy." This consists in chiselling open the mastoid antrum, removing the whole of the osseous partition between it and the meatus, and keeping a metal plug in the opening thus made until the pit granulates from the bottom, and the central cavity is obliterated by means of fibrous tissue.

Drs. Ferrers and Clarke[16] give full clinical reports of a large number of mastoid operations. These cases illustrate in particular the im-

portance of establishing a free communication between the tympanum and the mastoid opening. They find the operation facilitated by the use of a kind of "rongeur" forceps with very long blades (*Fig.* 8), made for them by Wülfing, late Luer, of Paris.

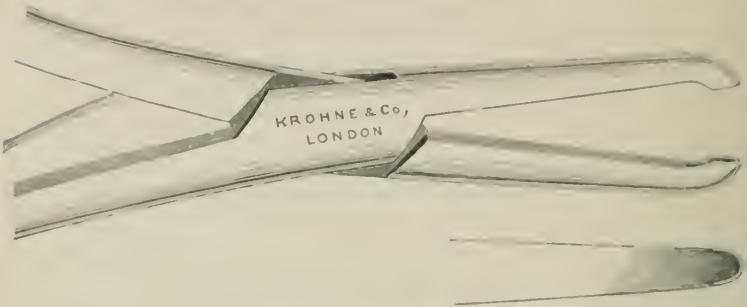

Fig. 8.—Modified Zaufal's Rongeur Forceps.

Buck[9] has found that in operations on the mastoid there is a difficulty in keeping in sight the landmark afforded by the junction of the upper and posterior walls of the meatus when the seat of operation is bathed with blood. To avoid this he has devised the instrument figured below (see *Fig.* 9), which is like a single-clawed hammer. The claw is inserted between the soft parts and the bone, the handle is held by

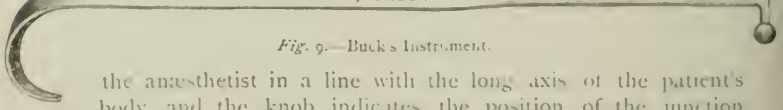

Fig. 9.—Buck's Instrument.

the anæsthetist in a line with the long axis of the patient's body, and the knob indicates the position of the junction of the superior and posterior walls, even when there is considerable hæmorrhage.

The Modified Stacke's Mastoid Operation.—Stacke's operation consists essentially in detachment of the auricle, longitudinal section of the posterior membranous wall of the meatus, separation of the remains of the posterior half of the membrana tympani, removal by chiselling of the bone intervening between the antrum and the meatus, and plugging in of the flaps of membranous meatus so as to help to line the bony space laid open.

This is now modified, and, according to Allen,[10] is performed at Prof. Schwartze's clinique as follows: The auricle is detached, the mastoid antrum opened according to Schwartze's method, the "membranous"

meatus (postero-superior part) is detached and held forwards by means of a probe. The bone between the antral opening and the meatus is chiselled away, the "membranous" meatus is slit, and the large cavity is plugged from the natural meatus, the auricle being replaced. *Should no antrum be met after chiselling to the depth of a centimètre*, the work is proceeded with from the roof of the meatus.

The most recent development (according to Dr. Rudolph Panse, late chief assistant to Prof. Schwartze) consists in the free use of a strong bent probe which is passed down the meatus and through the opening leading from tympanum to the antrum. By working down on to this, all danger to the facial nerve or external semicircular canal is avoided.

The Serious Sequelæ of Chronic Suppuration of the Middle Ear.—We must refer our readers to the full account of this subject given in last year's "Annual." Mr. Arbuthnot Lane[19] describes his course of treatment in case of serious complications. He would open the antrum, clear out the tympanum, and, in case of pus or caseous material being found, expose the middle and posterior cranial fossæ. Should sub-dural pus be found, he would wash it away and cleanse the dura mater. In his further action, he would be guided by the absence or presence of rigors. In their absence he would do nothing more. In case of rigors being present, he would explore the lateral sinus (this is done with a fine trocar and cannula). If the passage of liquid blood shows that it is not thrombosed, his experience would lead him to tie the internal jugular vein, open the sinus, and plug it. If the sinus is thrombosed, he would tie the vein, open the sinus, remove the clot, and irrigate. If nothing has been found so far, the temporo-sphenoidal lobe (and cerebellum) may be aspirated through the dura mater, and any abscess found properly drained. Should no pus be found in any of these situations, but evidence of meningitis exist, he would look on the latter as extending from the internal auditory meatus, and outside operative treatment.

Mr. H. Percy Dean[20] describes a case of post-otitic cerebellar abscess, and formulates his course of proceeding. The patient had severe headache and mastoid complications, following chronic otorrhœa. The mastoid was opened, and the lateral sinus was explored by means of a fine trocar. A little pus came from the antrum, but only pure blood from the sinus. Slight improvement took place, but in a few days there came on cerebral symptoms, chiefly of a comatose character, with subnormal temperature and sickness. Mr. Dean then operated as follows: A semi-circular flap of skin (*vide*

Fig. 10), just above and behind the ear, and then one of periosteum, were turned down, the pin of a three quarter inch trephine was placed one inch behind, and half an inch above, the centre of the external meatus, and a disc of bone was removed. The lateral sinus was exposed below, and the dura mater protruded above. The latter was incised, and the brain bulged from the opening. A small hydrocele trocar was inserted in several directions, but no pus was found in the temporo-sphenoidal lobe. The

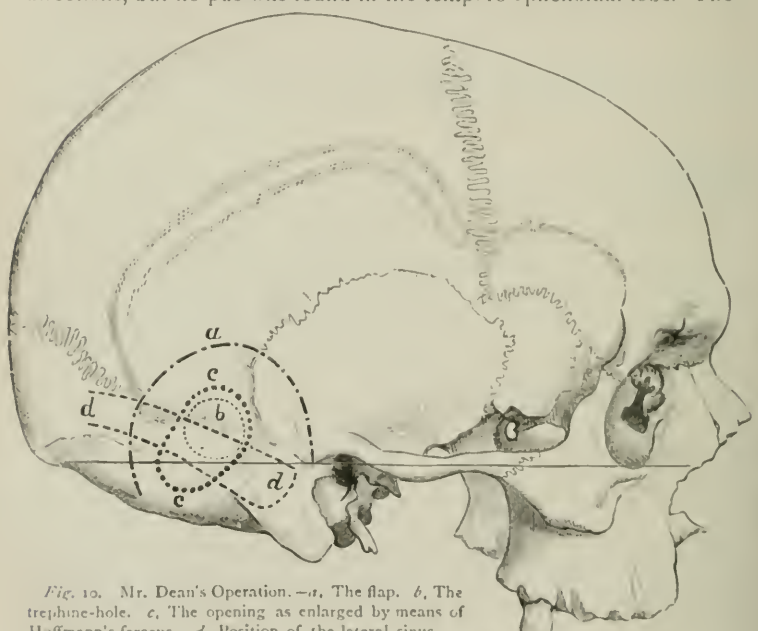

Fig. 10. Mr. Dean's Operation.—*a*, The flap. *b*, The trephine-hole. *c*, The opening as enlarged by means of Hoffmann's forceps. *d*, Position of the lateral sinus.

bulging did not diminish, although some cerebro-spinal fluid from the lateral ventricle escaped. The lateral sinus bulged abnormally, but a fine trocar passed into it withdrew unclotted blood. The opening in the skull was then enlarged downwards and backwards for half-an-inch by means of Hoffmann's forceps (*Fig.* 11), till it extended beyond the lower border of the lateral sinus, and exposed the dura mater over the cerebellum. This was incised, and a fine trocar was passed into the cerebellum; pus escaped, a larger trocar was introduced, then a pair of sinus forceps, and a drainage tube. Rapid improvement followed.

He insists on the exploration of the cerebellum being practised as

regularly and methodically as that of the temporo-sphenoidal lobe, seeing the *uncertainty attaching to the diagnosis between cerebral and cerebellar abscess*, and offers the above method as a simple and expeditious one. Sometimes there is difficulty in diagnosing *cerebral abscess from meningitis*, where the symptoms are due to cerebral compression. "If, after exposing the brain, evidence of meningitis is present, and no pus can be found (*i.e.*, the brain-substance protrudes, but the exploring trocar reveals no abscess—ED.) the lateral ventricle

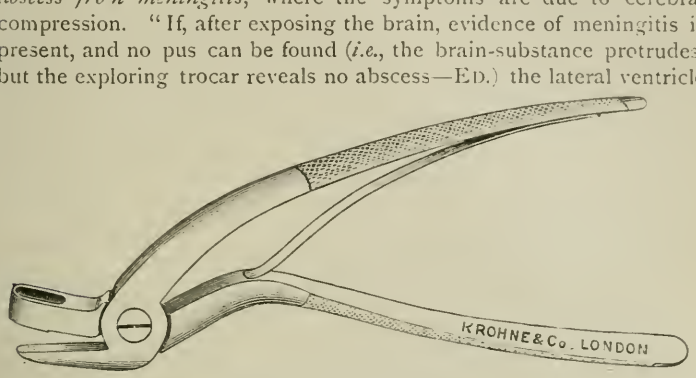

Fig. 11.—Hoffmann s Forceps.

should be tapped by inserting a trocar inwards and slightly upwards, just above the lateral sinus." (Temporary improvement has been known to follow this procedure.) In cases where the symptoms leave a difficulty in making the diagnosis *between sinus-thrombosis and abscess or meningitis*, the condition of the sinus may be ascertained in the course of the operation described by the insertion of a fine trocar and cannula. If thrombosis is found, he recommends tying the internal jugular vein, opening the sinus and draining it (as devised by Horsley, and practised by Ballance, Lane, Rushton Parker,[21] and others).

III.—INTERNAL EAR.

On the **Pilocarpin** treatment of labyrinthine deafness, Mr. Field[22] offers the following observations: (1,) The case must first be carefully diagnosed as actually one suitable for treatment with the drug. Labyrinthine deafness, it must be remembered, is not a disease of a common occurrence; (2,) The larger number of the patients that hear better in a noise (when in a train or omnibus, for example) do not derive much, if any, benefit from pilocarpin, if used independent of other remedies; (3,) The best test of hearing is to employ a large tuning fork with a wooden handle, acting as a sounding-piece, to put on the head. Some of the small tuning-forks commonly used are worthless to the aural surgeon; (4), Cases in which the tuning-fork on

the forehead is heard indifferently, or scarcely at all, may be suitable for treatment with pilocarpin ; (5,) Patients with a syphilitic history are usually much relieved, and the possibility of hereditary syphilis in a given case must be borne in mind ; (6,) The very large number of patients that say they hear worse after a cold are mostly unsuitable cases ; (7,) Patients who say they can hear when they are spoken to very distinctly, or whose deafness began with a difficulty of discriminating sounds, or who cannot make out general conversation, and hear worse when tired, nervous, or feeling out of health, are more promising cases than the last mentioned ; (8,) In arriving at a diagnosis, the state of hearing as tested by the watch and the condition of the drum-head should be noted ; (9,) Some cases of marked aural vertigo derive benefit from pilocarpin ; (10,) If middle-ear disease is associated with mischief in the internal ear, the Eustachian catheter should be passed from time to time for the injection of vapours.

His usual method of administering pilocarpin is to inject into the back of the arms a solution of the nitrate of a strength equal to 1, gr. to 10 minims. The dose at first, $\frac{1}{12}$ gr., is gradually increased to $\frac{1}{8}$, $\frac{1}{6}$, or, if well borne, $\frac{1}{4}$ gr. The effect is speedily manifested by diaphoresis and copious salivation. After each injection he gives $\frac{1}{2}$ a drachm of sal-volatile in a small tumblerful of water. The patient is then made to lie on a sofa, and is well covered with rugs, the head being enveloped in a shawl. When the effects are wearing off the wraps are removed, but only by degrees, in order to avoid the risk of catching cold. In the event of faintnesss or other discomfort from the exhibition of the drug, he gives brandy at once, which he keeps ready at hand, and finds the best restorative.

He quotes several cases in which the statements of the patients themselves regarding their improvement are given ; but the clinical features are not described, and there is no mention of unsuccessful cases.

Mr. T. Hyde Hills [3] mentions that two cases under his care improved to some extent, but three weeks after treatment were as deaf as before. He had the opportunity of seeing from time to time a case which was treated by Mr. Field with the same negative result.

Dr. Bronner (Bradford) is quoted by Mr. Field as having employed the pilocarpin treatment in ten cases. Five were cases of congenital syphilis, and of them four improved. Four were acquired syphilis, and two of them were much benefited, the others not. The tenth case, one of subacute inflammation of the internal ear, had a most successful result.

Professor Politzer [4] has made the important protest—quoted in last year's 'Annual'—against the too ready adoption of the pilocarpin

method of treatment. Unless in perfectly appropriate cases, the disturbance of health occasioned by the drug is a serious consideration. He holds that positive harm is done in cases of sclerosis of the middle-ear, often most difficult to diagnose from labyrinthine disease, and dwells on the importance of selecting cases in which the air-conduction is better than the bone-conduction ("positive Rinné"), both being considerably below the normal.

(The limit of duration beyond which it is useless to attempt treatment is not laid down, and it would be most valuable to have a statistical record of failures as well as successes, so that the reasons for variety of result might be better recognized.)

IV—Aural Disturbances in connection with Various other Diseases.

Disease of the Organs of Hearing following Tabes Dorsalis.—Treitel[25] in a brief report of six cases, draws the general conclusion that sclerosis of the posterior columns of the cord not rarely causes trophic changes in the middle ear, which may lead to disturbances of hearing. In two of the cases he considered the deafness to be due to an affection of the nerve, since the hearing distance for speech, the bone-conduction for the tones of the fork and watch, and the perception of acute tones were markedly lessened.

Professor Habermann[26] describes the anatomo-pathological conditions found in the hearing organs of a woman in whom the first symptom of tabes, twelve years before her death, was extreme deafness. The cochlear nerve was nearly completely disorganized and replaced by connective tissue, containing many small corpora amylacea. The vestibular branch was in an advanced state of degeneration. The organ of corti was destroyed, except at the very apex of the cochlea. Few of the nerve-fibres in the vestibule and semi-circular canals were preserved. The degeneration extended along the auditory nerve to the nuclei in the medulla, which were, however, normal.

Aural Disturbances in Chronic Bright's Disease.—Dieulafoy is reported to have mentioned, as a frequent complication of Bright's disease, incomplete deafness, accompanied or unaccompanied by noises, and sometimes associated with sharp pains in the ear or in the face. Dr. Bonnier[27] describes, under the designation of "Auricular Brightism," a form of Menière's disease, paroxysmal in character, generally due to vaso-motor trouble, such as congestion, hæmorrhage, œdema of the internal ear, determined by uræmia. These symptoms may occur early or late in the disease. It is important to recognize the cause, as in the treatment quinine should be avoided, and an exclusive

milk diet insisted on. Dr. Church,[28] writing on the vertigo of arterio-sclerosis, recommended **Iodide of Potassium** as a remedy

Dundas Grant's Method for Fixation of the Patient for Operation in the Sitting Posture under Anæsthetics[12].—A hook is fixed near the top of the posterior surface of the back of a high-backed chair. A jack-towel with the seam undone is placed over the patient's shoulders like a priest's stole, the middle being behind his neck, the ends passing over his shoulders, and hanging down in front. He is then seated on the chair, the middle of the towel is lifted off his neck over the top of the back of the chair and on to the hook. The ends are brought back under his armpits and crossed behind over the hook, where they may be held by an attendant or fastened so as to be readily undone. This attitude is of course inadmissible for chloroform, but for nitrous oxide or ether it suits extremely well, and obviates the risk of the patient slipping off the chair and coming round before there is time to collect him and prop him up again. The editor has found this method of fixation admirable for operations on the ear, the head being held against the chair-back by an assistant.

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ECTROPION.

William Lang, F.R.C.S.

Gama Pinto has employed the following operation for several years in those cases of ectropion where the conjunctiva is hypertrophied, red, and everted; it consists of a tarsorrhaphy at the external canthus, with a shortening of the lower lid, and an excision of a part of the exposed conjunctiva. He excises by means of two incisions, converging

towards the two commissures, a cuneiform-shaped piece of conjunctiva, larger or smaller, according to circumstances, and unites the margins of the gaping wound by a continuous suture. By pulling the lower lid towards the outer canthus he observes by how much the lower lid is longer than the upper, and then excises the excess as well as a triangular piece of skin. The terminal point of the shortened lower lid is united to the corresponding point of the upper lid, the skin wound closed with a couple of sutures, and the operation is finished. The eye should remain bandaged for eight days ; the conjunctival sutures can be removed on the fourth, and the other sutures on the sixth day. The excised conjunctiva being greatly hypertrophied, the shortening of the lower cul-de-sac is insignificant. The operation, if carefully performed, produces an irreproachable replacement of the lower lid.

ECZEMA. *T. Colcott Fox, M.B.*

At the Leipzig meeting of the German Dermatological Association, Neisser, amongst others, read an able paper, which it is difficult to do justice to in a short abstract. He attaches great importance to the anatomical idea (the form) of what we call eczema, rather than to its course or causation ; and he adheres to Hebra's standpoint, but attaches greater importance to what he regards as the specific epithelial alteration. "Eczema is a more or less acutely beginning, superficial inflammation, accompanied by marked serous hyperæmia and exudation (located chiefly in the papillary bodies, and in the upper layers of the corium), and by a peculiar exfoliation of the epidermis which is best described as a desquamative epithelial catarrh. The anatomical picture is characteristic, and not varied in eczemas of a totally different course, or that have been produced by very different causes." A distinction must be made between : (1,) Primary, essential causes (mechanical, chemical from without, chemical from within, micro-organisms) ; (2,) Predisposing agencies, which are numerous and varied, comprising both external and internal conditions ; (3,) Circumstances determining the chronicity, also numerous and varied.

Neisser raises objections to many of Unna's conclusions, and objects to the latter's "Seborrhœic eczema" and "Tuberculous eczema." As etiological considerations afford no help, we are forced to an antiphlogistic symptomatic treatment.

Brocq separates (1,) Cutaneous lesions of eczematous appearance, caused by diverse irritants and by parasites ; (2,) Impetigo ; (3,) Dysidrosis ; (4,) Vidal's chronic simple lichen. Eczema will then comprise "dermatoses of origin apparently spontaneous or developed after an occasional cause insufficient to determine the eruption, and

characterized objectively by a dermatitis, more or less accentuated, *e.g.*, by redness and infiltration, sometimes vesiculation, by exuding serous fluid which stiffens linen, and by desquamation. He allows that Unna's parasitic theory will explain most cases. Besnier says the term eczema represents neither a lesion nor a disease, but designates a most complex and confused dermatological genus.

Jonathan Hutchinson holds that "eczema" is not a substantive disease, but simply one of the commonest forms of local dermatitis, and may be evoked by a great variety of kinds of local irritation. However evoked, it originates, in the act of inflammation, a material which is more or less infectious to the tissues of the patient, and thus scratching is one of the chief causes of the extension. In this way anything (wine, fish, sugar, fruit, etc.), which makes the skin itch, may aggravate eczema. For the most part it shows no tendency to spread from the patient to those about him, yet in some cases, especially when in hot weather many elderly people occupy the same ward, eczema may prevail as an epidemic. Susceptibility to eczema probably concerns the organization and functional perfection of the skin itself. There is very little evidence in support of the belief that the liability to eczema ever depends in any material degree upon the state of the patient's health (scrofula, gout, or any form of diathesis). Infants and old people are especially prone to attack. The eczematous type of inflammation is by no means abruptly defined, but may present considerable variations. It rarely shows any tendency to spontaneous subsidence. In certain cases, some complication with erysipelas is suggested.

The treatment demanded is the removal of all exciting causes; the employment internally of remedies calculated to allay irritability and reduce inflammation; the patient local use of much diluted applications, likely to repress cell-growth, and possibly to act as parasiticides (**Tar, Mercury, Lead**, etc.).

Garrod says that eczema is the characteristic skin disease of gout, and he thinks the eruption a means of eliminating uric acid, though he finds no uric acid or urates in the fluid of eczema, because the inflammatory exudation destroys the acid.

B. W. Richardson recommends the application of **Styptic Colloid** (a saturated solution of tannic acid and xyloidine or gun-cotton) in absolute alcohol and pure ether, with perhaps with a little benzoin added.

Eddowes, who accepts Unna's views, dries a weeping eczema by dabbing on a **Lead** and **Spirit Lotion,** followed by free dusting with **Zinc Oxide, Starch** and **Boric Acid.**

Simon, of Birmingham, has treated a few cases of very chronic eczema by **Pilocarpine** injections ($\frac{1}{8}$–$\frac{1}{6}$ grain twice daily), with the happiest results.

Saalfield recommends **Thilanine,** a substance obtained by the action of sulphur upon lanolin, and containing 3 per cent. of sulphur. Neisser also got good results from **Tumenol,** a body analogous to ichthyol. Leven in obstinate weeping eczema applies during the day a 1 per cent. solution of **Silver Nitrate,** and covers the part at night with a **Bismuth Ointment.**

Lastly, we may call attention to an article by Duhring on the treatment of acute vesicular eczema and to the exhaustive lecture by Besnier on the treatment of eczema generally. Duhring likes **Black Wash** diluted with 1 or 2 parts of **Lime Water** and a little mucilage, followed by the use of cloths spread with **Oxide of Zinc** ointment or paste, and renewed three times daily.

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EMPHYSEMA.

Synopsis.—(Vol. 1892, p. 222.) **Nourishing Food, Fresh Air, Careful Habits, Avoidance of Strains,** etc., are necessary, together with use of **tonics,** *e.g.* **Elixir of Phosphate of Iron, Quinine and Strychnine.** A teaspoonful containing Iron 2 grains, Quinine 1 gr. and Strychnine $\frac{1}{60}$ to $\frac{1}{100}$ grain, this dose being taken three times a day before meals. When chronic bronchitis complicates the case **Iodide of Potassium** is useful, given in considerable doses over a long period. When cardiac dilatation and œdema are present, use the following: R Sp. Æth. Co. ℥j, Ammon. Carb. ℥iij, Inf. Digitalis ad. ℥iv. M. Sig.—A teaspoonful every two, three, or four hours, in a little water.

ENDOMETRITIS.

Wm. J. Smyly, M.D., F.R.C.P.

Kaltenbach divides these cases into those resulting from : (1,) Disturbed circulation ; (2,) Irritation in the uterine appendages ; (3,) Infection.

The latter are limited to the cervix, unless they are due to puerperal infection or improper gynæcological interference.

The entire uterine mucous membrane is to be treated only in cases where symptoms point to its implication.

Caustics which might cause stenosis and atresia are to be avoided,

as well as oft-repeated intra-uterine applications, and especially forcible dilatations of the cervix, not only because of the danger of infection and consequent inflammation of the uterus, cellular tissue, and peritoneum, but also because these frequent manipulations produce nervous symptoms, headache, palpitation, sleeplessness, depression, etc.

All intra-uterine treatment should be preceded by careful cleansing of the vulva and vagina, then the interior of the uterus is dried with sterilized cotton and, lastly, the medicament, *e.g.*, **Tinc. Iodi**, applied on cotton wrapped on probes. In chronic cases the thickened mucous membrane should be removed with a curette. He attaches much importance to keeping the patient in bed for five or six days after the local treatment, and, if necessary, the process may be repeated after some weeks.

Synopsis.—(Vol. 1892, p. 224.) **Chloride of Zinc Pencils** are advised in preference to the curette. Gatterno dries the canal with cotton wool, stuffs with **Iodoform Gauze**, and packs the vagina. Skutsch dilates the cervix, curettes and cauterizes for "hæmorrhagic" endometritis, and for the "catarrhal" form dilates with a metal dilator, and uses daily irrigation, first using **Soda Solution** 3 per cent., and afterwards **Carbolic Acid** 2½ per cent, or **Sublimate Lotion** 1 to 5000. Duke insufflates powdered **Boracic Acid** through a curved Vulcanite tube provided with a piston. The curette is useful in all forms. Lawson Tait's recommendation of **Dilatation** and free application of **Paquelin's Cautery** has been successful

ENTERIC FEVER. *Frank J. Wethered, M.D.*

Dr. M. A. Boyd,[1] of Dublin, remarks that, considering the disease "as primarily a catarrhal one of the intestines, and secondarily as one of septic poisoning, our treatment resolves itself into suitable diet and antiseptics. We know already how all-important is the treatment of enteric fever by bland and unirritating diet, and such as will be mainly absorbed by the stomach and duodenum, leaving little to be dealt with by the lower part of the small intestine. The medicinal treatment of typhoid fever by **Antiseptics** is now receiving that amount of attention which our more perfect knowledge of its bacteriological origin would suggest, and we see occasionally in the medical journals glowing accounts of the success of this method of treatment in the hands of some; while others confess it has not realized their expectations." He continues: "As far as I am concerned, I have used this method of treatment for several years in both hospital and private practice, and have every reason to be satisfied with the results. I do not profess to believe that it will abort a case of typhoid fever when the characteristic fever has begun; but I do assert that it will prevent in the majority of cases the septicæmia—for it is nothing but septicæmia—which we have to deal with after the second week of the fever is passed. The

typhoid bacillus has by this time done its work, so far as the intestinal glands are concerned, and hereafter we have only saprophytic bacteria and their effects to deal with. In seeking for a suitable antiseptic for this purpose, we must choose one which will fulfil the following objects: It must first exercise its effects in the intestinal canal, and not in the stomach. Its action must be thorough, antisepticising not alone the contents of the bowel, but it must permeate the intestinal wall as well, where septic micrococci may have already established themselves, and even enter the blood. To fulfil these conditions the form of antiseptic must be, in my opinion, a gaseous one. We know how readily the intestines absorb gases and pass them into the blood. The antiseptic I am in the habit of using is **Chlorine** in an alkaline solution, as in this form it mingles best with the contents of the intestines, which in enteric fever exhibit a strongly alkaline reaction."

Werner,[2] of St. Petersburg, was led to use **Chloroform** in enteric fever on account of its bacteria-killing properties, a ½ per cent. solution killing typhoid bacilli. Between November, 1890, and September, 1891, fifty-six cases were thus treated. A 1 per cent. solution was given in ounce doses every one or two hours at first. No ill effects were produced. Jaundice occurred four times, but only in one case was it necessary to omit the drug. Once ergot had to be used for severe hæmorrhage, and once quinine for intermittent temperature. None of the cases died. The thirst was lessened, the diarrhœa gradually diminished, and meteorism disappeared. In no case admitted with clear intellect did the typhoid state supervene.

Dr. Anderson[3] treats typhoid fever by the administration of hourly doses of 5 drops of the **Perchloride of Iron** in a little water, to which glycerine or syrup is added. If the patient suffer from nausea it may be combated by the addition of 25 centigrammes (4 grains) of the **Subnitrate of Bismuth** given ten minutes before the iron is taken. According to the writer, the fever and diarrhœa quickly cease under the influence of the perchloride, at the most within five days, if the treatment has been instituted two or three days after the appearance of the fever. The drug should be continued at least a week after the cessation of the fever. The writer has used this treatment for years, and has never lost a case when it was instituted early, *i.e.*, before the appearance of grave symptoms.

De Simone[4] is of opinion that, whereas during the first ten days of enteric fever, the high temperature is due to systemic infection with the specific typhoid bacillus, after that period the fever is of a

different type, and is mainly due to secondary infection with other bacteria derived from the intestine.

Having found in **Calomel** an excellent intestinal disinfectant in epidemics of cholera and dysentery, he has tried this drug in cases of typhoid with very good results. He gives small doses (5 centigrammes with 1 centigramme of opium) every two to four days. It has no influence on the fever of the first seven to ten days (that due to the presence of the B. typhosus in the tissues), but after this he has found that in many instances it completely cut short the secondary oscillations of temperature (probably by a disinfectant action on the intestine).

Pearson,[5] of Cape Colony, writes that he has found the following method extraordinarily successful in a very large number of cases. He prescribes from 15 to 20 minims every three or four hours of a solution made as follows, and gives no other medicine whatever, maintaining a milk diet: The solution is made by dissolving 1½lbs. of carbonate of sodium in 24 ounces of water, and by triturating thoroughly 1lb. of chloride of lime in 120 ounces of water. These liquids are now filtered and mixed together, and then again filtered. The solution should be perfectly clear and free from traces of lime, and should be kept in a cool place. This treatment Pearson continues until the temperature has remained normal for two days.

M. E. Tordeus[6] employs a mixture of **Antifebrin** and **Resorcin**, equal parts, āā 0·30; **Elixir de Gaius** and distilled water, of each 36 grammes. Of this mixture, he gives ½ an ounce every three hours. Treated by this method, he states that patients do not suffer from prostration, or dulness of mind, and that their convalescence is much more rapid than usual.

Dr. H. C. Wood[7] warmly recommends the use of **Turpentine** in typhoid fever, especially under two conditions: Firstly, when the existence of local intestinal symptoms points towards slowness of the healing of the ulcers; and secondly, when there is marked tympanites with dryness of the tongue, at the end of the second week. Dr. Wood recommends that the turpentine should be given in glycerine, and gives the following formula:—

R Ol. Terebinthinæ	f℥ij	Mucil. Acaciæ	f℥iss
Glycerinæ	f℥j	Aquæ Men. Pip. q.s. ad	f℥viij
		M.	

Sig.—Tablespoonful every four hours during the day. Shake well.

Dr. Wallace Beatty[8] gives some useful hints in discussing the dietetic treatment of enteric fever. He considers that milk is unquestionably the best and safest food for enteric patients, given

diluted with a little soda-water, lime-water, or plain water. It agrees well with most patients. If there is diarrhœa, it is best to give it boiled; otherwise boiling is unnecessary. Sometimes it is necessary to peptonize the milk. If a patient can take it, milk alone is the best food during the entire illness. If milk is vomited, or curds are passed by stool, whey may be advantageously given; if whey is given, beef-tea with the grounds, or beef-juice, should be given along with the whey to take the place of the albuminate casein.

As regards quantity, he considers that two to three pints of liquid nourishment in the twenty-four hours is ample food for adults, less, proportionately, for children. By care in the quantity and the nature of the food, many of the symptoms which are liable to give trouble are more easily controlled.

Van Hook[9] considers the vexed question of laparotomy for intestinal perforation, and records three of his own cases. He proceeds to show that in nineteen recorded cases in which the operation was performed, there were four recoveries. In some of the cases of recovery the diagnosis was doubtful. In the great majority of cases the perforations were within two or three feet of the cæcum, usually in the ileum, rarely in the colon; hence this part of the bowel only should be searched. The perforation, when found, should be closed by a line of sutures placed parallel to the long axis of the bowel. These sutures should be interrupted. The abdominal cavity should be thoroughly washed out by means of a thick stream of sterilized salt solution at a temperature of 105° to 112° F.

In these cases the anæsthetic should be chloroform. The author draws from his study of the subject the following conclusions: (1,) There is no rational treatment for perforation in the course of typhoid fever, except laparotomy; (2,) The indication for laparotomy when perforation occurs in typhoid fever is imperative; (3,) The only contraindication is a moribund condition of the patient; (4,) Collapse is often at least temporarily relievable by hot peritoneal flushing; (5,) The stage of the fever is not to be considered as an indication or as a contraindication for laparotomy; (6,) The severity of the typhoid fever is alone not a contraindication; (7,) Early laparotomy offers the most hope; (8,) The symptoms of peritonitis should not be awaited before operating; (9,) The published statistics of laparotomy for this condition are strongly in favour of operation; (10,) The technique, though not complicated, demands much thoughtfulness, acquired dexterity, great rapidity, and thoroughness.

REFERENCES.—[1] "Lancet," March 26, 1892; [2] "Brit. Med. Journ.," March 5, 1892; [3] Anderson, "Gazzetta degli Ospitali," No. 57, 1892;

[4]Simone, "Brit. Med. Jour.," Feb. 6, 1892 ; [5]Pearson, "Lancet," Dec. 5, 1891 ; [6]Tordeus, "Jour. de Méd. de Bruxelles," and "Med. Press," Oct. 21, 1891 ; [7]Wood, "Therap. Gaz.," June 15, 1892 ; [8]Beatty, "Dublin Jour.," May, 2, 1892 ; [9]Hook, "Med. News," vol. lix. No. 21, Abstract in "Therap. Gaz.," Jan. 15, 1892.

EPIDIDYMITIS. *F. S. Eve, F.R.C.S.*

It has long been recognized that double epididymitis is sometimes followed by sterility. Later observations have shown that in the vast majority of cases the sterility is only temporary and that, after a period of time varying from two months to two years, such patients are able to procreate, sterility in reality being an exceeding rare sequel of double epididymitis. The question as to the percentage of cases in which recovery is complete, and the percentage in which sterility results, has been investigated by Balzer and Souplet[1], who have contributed the results of examinations made upon forty-six cases of double epididymitis. They consider all cases recent in which examination of the sperm was made less than six months after the double epididymitis. Of thirty-four such examinations, spermatozoa were found in but three. Six old cases, in which examination was made more than six months after the last attack of epididymitis, showed spermatozoa in five. This result apparently confirms the statement of Gosselin, who wrote that obliteration of the ducts may continue for a variable period ; it may disappear in three, four, five, or eight months, allowing the spermatozoa to escape ; indeed, it is not possible to set a limit as to the time after which recovery is impossible. In some of the recent cases examined by Balzer and Souplet, spermatozoa had disappeared six days after the beginning of the inflammation, a result not in accordance with the teaching of Monod and Terrillon, who state that in double epididymitis spermatozoa persist in the semen for two or three weeks from the beginning of the attack.

The practical application of these facts is that patients should be told when suffering from an attack of double epididymitis that there will be temporary sterility, but that the power of impregnation will probably return ; that there is a possibility that sterility may be permanent.

Hence it is of cardinal importance that these patients should not be discharged as cured until there is complete functional restoration.

TREATMENT.—The treatment appropriate to the beginning of the attack is appropriate to all its stages. This consists in the application of the means found to be most potent in combating inflammation in any part of the body—**Rest, Elevation, Pressure, Heat, Moisture,** and **Mercurial Applications.**

The presence or absence of the nodular infiltration of the epididymis

seems to give no reliable indications as to whether or not the ducts are patulous, though its steady disappearance under treatment is always an encouraging sign. The only reliable test is afforded by occasional microscopic examination of the semen.

REFERENCE.—"Therap. Gaz.," June 15, 1892.

EPILEPSY. *Græme M. Hammond, M.D., New York.*

The treatment of epilepsy by **Borax** is highly recommended by Mairet[1]. The chief effects of borax, according to this observer, are exercised upon the alimentary canal and the skin, so that, if overdoses are given, the drug produces nausea, diminution of the appetite, vomiting and diarrhœa. General nutrition is interfered with. There are frequently puffiness of the face, œdema of the extremities and, finally, a true alkaline cachexia may develop. The changes in the skin consist of either papular or scarlatinous eruptions. The former usually begins about the joints, and then spreads; the latter may appear upon any part of the body, and is usually followed by desquamation. For these reasons, during the administration of borax, great care should be paid to alimentation, and the drug should not be given in large enough doses to cause nausea and vomiting. It is well to give tonics, such as iron and quinine, with astringent mixtures, or naphthol, or salicylate of bismuth, to control the diarrhœa. One of the chief causes of nausea and loss of appetite is caused by the disagreeable odour and taste of the drug. This can be obviated by employing the remedy in one of the following forms:—

℞	Borax	ʒijss	Liquorice mixture	ʒiv
	Glycerin	ʒvj		

Or,

℞	Borax	ʒijss	Strong Coffee	ʒj
	Glycerin	ʒvj	Sugar of Milk	ʒijss

Or,

℞	Borax	ʒijss	Syrup of Bitter Orange	ʒiij
	Glycerin	ʒjss		

In other cases it may be found well to make the borax into a confection, and administer it in that manner; but it is not considered wise to give the drug in capsules.

Borax should be given at first, in doses of from 8 to 15 grains, and gradually increased until it produces some disturbance of the alimentary canal. If 2 drachms a day are not sufficient to completely control the paroxysms, larger doses will be useless, and besides this, disagreeable effects are apt to be produced, and the drug soon loses its antispasmodic effects. If borax diminishes the attacks, and it is thought necessary to continue its administration, it may be given in

doses of from 15 to 30 grains a day. It should be given as far away from meal times as possible, so that digestion may not be interfered with.

Dr. Edwin Dunn[1] has used **Hydrate of Amylene** in fourteen cases of epilepsy. He gave it in ½ drachm doses three times a day for the first four weeks, and then four times a day. In three cases the number of fits was increased; in five the number diminished; and in four there was no change. Two cases died in *status epilepticus*. He concludes that this drug may be useful in mild cases, but is of no service in severe forms, and that it possesses no advantages over the bromides.

Drs. Trowbridge and Mayberry[2] recommend **Hydrobromate of Hyoscine** and **Hydrobromate of Conine** when used hypodermically, as very efficient remedies in the *status epilepticus*. Hydrobromate of hyoscine was injected in doses varying from $\frac{1}{100}$ to $\frac{1}{50}$ gr. Under its use the convulsions quickly ceased, the respirations became more frequent and less full, and sleep followed. Hydrobromate of conine was injected in doses varying from $\frac{1}{100}$ to $\frac{1}{40}$ gr. This seemed to be even more efficacious than the hyoscine. When combined with morphine, sleep of several hours' duration follows.

Rohuin[4] has successfully treated two cases by compressing the carotid artery. Pressure is made by the index and second finger, between the larynx and sterno-cleido-mastoid muscle backwards towards the spine.

Ott[5], in an interesting paper on "Absinthic Epilepsy," shows that absinthe produces typical epilepsy both in the lower animals and in man. The convulsions are not due to circulatory disturbances, but to irritation of the cortex expressed by means of the ganglia in the pons varolii. In absinthic epilepsy, the irritation is cortico-frontal.

REFERENCES.—[1] "Therap. Gaz.," April 15, 1892; [2] "Pract.," Nov. 1891; [3] Ibid., Nov. 1891; [4] "Lancet," Jan. 2, 1892; [5] "Journ. Nerv. and Ment. Dis.," Sept. 1892.

EPILEPSY (Operative Treatment of).

William Thorburn, B.S. (Lond.), F.R.C.S. (Eng.).

In a paper on the "Supposed Curative Effects of Operations, *per* ," Weite[1] again emphasizes the fact, so frequently lost sight of, that most operations, or even severe injuries, may temporarily arrest epilepsy, and that no case must be regarded as "cured" until after the lapse of a long period without recurrence. The absence of sufficiently long records renders most published cases useless.

Sachs[2] contributes an interesting paper on the treatment of epilepsy. He accepts the view of Marie, Féré and Chaslin, that many epilepsies

of children are due to meningeal hæmorrhage during birth, which is the starting point of sclerosis. Sclerosis he considers to be the real cause of epilepsy both here and in many traumatic cases, thus explaining the development of the latter long after the original injury. Hence our line of treatment must be to prevent or remove sclerosis, the former by excising any gross lesion which may lead to it, the latter by excising the sclerosed patch. The "practical conclusions" are, according to Sachs: (1,) In a given case of traumatic or organic lesion, operate as early as possible, to prevent the development of secondary sclerosis; (2,) If you have not operated at the outset, the onset of epilepsy is a warning that secondary sclerosis has been established. By operation at this time you may avoid an increase of the trouble; (3,) Excision of the diseased area is the only rational operation; if all other centres are not in an irritable condition, the operation may be thoroughly successful.

Excision of focal centres, it is admitted, generally fails to cure epilepsy, but "from what I have seen of the condition of brains years after an operation, I believe this danger from new cicatricial tissue to be quite slight" [cf. Sahli's view, "Brain, Surgery of the"].

Finally we have the following important statements: "Forty-four *per cent.* of all cases of infantile cerebral palsies develop epilepsy," and cases of supposed idiopathic epilepsy often prove to be of this nature, a slight paralysis being found, if carefully sought for. Such post-paralytic cases are—excluding gross lesions—"the only cases of non-traumatic epilepsy which demand surgical interference." The palsies come on *in utero* or in early life, the initial lesion having generally been a hæmorrhage, thrombosis or embolism, which is followed by sclerosis. In "fully ninety-five *per cent.*" the lesion is "in or upon" the cortex, *i.e.*, within reach of the knife. These cases are to be treated by operation in early life, and are hopeful. It is stated that "simple trephining"—by which Sachs means trephining without excision of centres—is more favourable than in traumatic cases, a result attributed to the greater frequency of cysts.

Agnew[3] collects fifty-seven cases of operation for *traumatic epilepsy*, of which four died from the operation, four died subsequently, nine were unrelieved, thirty-two received temporary benefit, and four only were cured, leaving four which were lost sight of. Thus then, even in the class of cases generally regarded as most favourable for operation, the results still leave much to be desired.

Knapp and Post[4] record two cases of operation for traumatic epilepsy, both of which were only partially relieved; but the accounts leave some doubt as to whether they were really traumatic cases.

These authors summarise their views as follows: "The hope of cure from trephining in traumatic epilepsy, or from excision of the cortex in Jacksonian epilepsy, is now regarded as slight, although relief is not infrequently obtained."

Interesting cases are recorded by Pick[5], who obtained three "recoveries" in as many operations for traumatic epilepsy, Miles[6], Lane[7], Cuneo[8], Tansini[9] and many others. (*See* also "Brain, Surgery of the.")

REFERENCES.—[1] "Annals of Surgery," Aug. and Sept., 1891; [2] Sachs, "New York Med. Jour.," Feb. 20, 1892; [3] Agnew, "Transac. of Second Congress at Washington," Sept., 1891; [4] Knapp and Post, "Boston Med. and Surg. Jour.," Jan. 7, 1892; [5] Pick, "Lancet," Nov. 28, 1891; [6] Miles, "Lancet," Nov. 21 and Nov. 28, 1891; [7] Lane, "Lancet," Jan. 17, 1891; [8] Cuneo, "Gazetta degli Ospitali," 1891, p. 79; [9] Tansini, "Gaz. Med. Lombarda," Jan. 6, 1892.

Synopsis.—(Vol. 1892, p. 226) Potts recently employed successfully **Bromide of Ammonium**, combined with **Antipyrin**. Lansing relieved a case, complicated with hysteria, by injecting **Glonoine** $\frac{1}{100}$ gr hypodermically. **Bromide of Gold** $\frac{1}{2}$ gr. doses may be used longer than other Bromides. Poulet combines **Potassium Bromide** with **Calabar Bean, Picrotoxine, Belladonna** or **Digitalis**, selecting the drug according to the state of the pupil. **Trephining**, apart from the discovery of anything abnormal, has given relief and cured in many cases. Aulde commends **Arsenic** in epilepsy (p. 19). Donath employs **Ethylene Bromide** instead of the Potash Salt: ℞ Ethylene Bromide, Spirits of Wine āā ♏32, Oil of Peppermint ♏2. Sig.—5 to 15 drops daily, or capsules may be used (p. 39). **Ferric Bromide**, gr. 3 to 5, in tabloid or solution (p. 43).

ERYSIPELAS.

T. Colcott Fox, M.B.

There is as usual a considerable amount of literature to record concerning erysipelas, especially relating to its treatment. Roswell Park in his Mütter lectures delivered before the College of Physicians, Philadelphia, deals with mixed and secondary infection, complicating erysipelas. He refers to the literature concerning the coincidence of erysipelas and arthritis, and accepts as a fact that there is a form of rheumatoid arthritis consecutive to erysipelas, but that it has nothing except locality in common with a much more severe and disastrous joint lesion in the shape of pyarthrosis. Probably, the streptococci of erysipelas are of themselves sufficient to produce pus, although such is by no means their invariable action. He points out the necessity of distinguishing between those implications of joints where there has been a direct extension from the skin to the underlying synovial membrane, and those which are at a distance from the part involved in the cutaneous manifestations.

Walter G. Smith also touches on some of the points raised by Roswell Park, and points out that erysipelas often starts from a source

of suppuration, and may itself be complicated by, or end in suppuration. It is a difficult matter, he remarks, to determine whether erysipelas is an entity, a truly specific disease, or whether it does not represent a phase or mode of action of the pus-producing organisms. Some uphold the specific character of the erysipelas germ, others teach that streptococcus pyogenes is at once an exciter of suppurative processes and of erysipelas. It is more than probable, he says, that there are several species of erysipelas due to different bacteria.

Instances are related of the well-known fact described as "erysipelas medicatrix," due to the antagonism of micro-organisms. Falkenberg describes the complete cure of a case of lupus vulgaris following an attack of erysipelas, and Coley nine cases of sarcomata, one quite cured, three healed, four improved.

The treatment by **Ichthyol** still finds keen advocates. Klein, of Warsaw, after trial made on severe cases, concludes that: (1,) Ichthyol undoubtedly exerts marked influence on the development of the micrococcus of erysipelas in the skin, which may be attributable either to the reducing action which this remedy exerts on the tissues, or to a direct action exerted on the pathogenic micro-organisms, or to both of these causes; (2,) Treatment by ichthyol reduces the duration of erysipelas at least half; (3,) Treatment need not be continued, as a rule, longer than three or four days. By this time the disease is usually cured; (4,) Under the influence of ichthyol the disease follows a much more benign course.

Under ordinary circumstances an ointment made of equal parts of ichthyol and vaseline is rubbed in as vigorously as the condition of the affected parts will allow. For extensive cases a weaker preparation suffices, which may be still further diluted for hairy parts. The affected regions should be thoroughly cleansed previous to treatment. After inunction, the parts are wrapped in a thin layer of hydrophile gauze moistened in salicylate water, and over this a thicker layer of non-absorbent cotton fixed; the procedure to be repeated three or four times daily for three or four days until the temperature has become normal. Alexeef in thirty consecutive cases obtained the most brilliant results. Radcliffe has been equally fortunate with several cases, Schneider has obtained almost invaluable and rapid success by applying beyond the diseased areas a 10 per cent. ichthyol collodion mixture in a very thick layer (Sacho's treatment). On a limb the erysipelas stopped on reaching such a band. He goes on to say that he thinks **Collodion** quite as efficacious without the ichthyol. The "Therapeutic Gazette" advocates a treatment similar to that of Klein. The affected skin is to be washed with solution of Bichloride of

Mercury (1 in 10,000), and then thoroughly anointed with ichthyol ointment (℥ij ad Lanolin vel Adip. Benz. ℥j). After that, the part is protected by a layer of salicylated cotton and a gauze covering, which can be adjusted to the muco-cutaneous orifices.

Tison treats erysipelas by producing vomiting and catharsis at the onset of the fever, and then administering **Aconitine** ($\frac{1}{60}$ grain every six hours), and pushing it to get its full physiological effect. Meanwhile the affected part is washed every two hours with a cloth soaked in sulphuric ether saturated with camphor.

Talamon projects on the affected part, by a small hand spray apparatus, a solution of **Sublimated Ether** (1 per cent.). The force and duration of each application must vary with the fineness of the skin, the site, depth of implication, existence of bullæ, etc. He does not scruple to provoke vesication. The face is covered with wet boric acid compresses. Crayot and others fail to get such good results with this treatment. Trapeznikoff treated twenty cases (mostly of the face), by painting on a solution of **Carbolic Acid** in **Turpentine Oil** (℥j to ℥ij) every hour or half hour. If begun early this treatment is said to cut short the disease.

Lastly, the **Mechanical Treatment** is well spoken of. Prof. Wolfler of Vienna, has re-tested the therapeutic effect of this older treatment by adhesive plaster accurately applied. The plaster must not be removed too early. Like Kraske-Riedel's method (scarification), this mechanical treatment gives better results on the face than on the lower extremities. In the latter situation the erysipelas often spreads on, owing probably to the less effective control there by this method. Of sixty cases treated in five years, two died from acute sepsis, whilst forty-eight had the disease decidedly limited. Hermann Kraell also again calls attention to his use of an elastic band. R. G. Hebb wrote a thesis in 1875 on the effects of constriction in erysipelas, which was published in 1885 in the "Medical Times and Gazette."

Lucke paints the diseased parts four or five times daily with **Rectified Spirits of Turpentine**, and covers up with wadding renewed at each painting. Cavazzini paints on every two hours an application consisting of tannin and camphor, of each 1 part, and ether 8 parts. He also got good results from the application of a 1 per cent. alcoholic solution of **Fuschine**. Carusi injects over the diseased area 1 in 1000 sublimate, and applies compresses of the same. Dauches gives large doses of **Sodium Salicylate**.

REFERENCES.—Roswell Park, Mutter Lectures, "Ann. of Surgery," January 1892; Walter G. Smith, "Dublin Med. Journ.," Jan 1, 1892; Falkenberg quoted "Brit. Journ. Dermat.," May 1892; Coley, "Ann

of Surgery," Oct. 1891 ; Klein, "Berlin klin. Wochen.," 1891, No. 39 ; Alexeef, quoted, "Brit. Journ. Dermat.," May 1892 ; Radcliffe, "Therap. Gaz.," May 1892 ; Schneider, "Centrabl. f. Chir.," No. 1518, 1892 ; "Therap. Gaz.," April 1892 ; Tison, "Journ. de Méd. de Paris," 1892 ; Wolfler, "Med Press and Circ.," Nov., 4, 1891 ; Kraell, "Therap. Monats.," Feb. 1892 ; Sacho, "Bull. Gén. de Therap.," May 30, 1892 ; Lucke, "Rév. des Sc. Méd.," April 15, 1892 ; Cavazzani, "Gl. Incurabili," May 1 and 15, 1892 ; Carusi, "Revista ital. di terap. e igiene," xii, 1892, No. 1 and 2 ; Dauches, "La France Méd.," April 15, 1892 ; Correspondence, "Lancet," Lond., Jan. 1892.

Synopsis.—(Vol. 1892, p. 228.) Rothe paints every two hours with R Carbolic Acid, Sp. Vin. Rect. āā. 0·5, Tr. Iodi. 1·0, Glycerine 10·0, Ol. Menth. Pip. gtt. ij. But he prefers applying the following, two or three times daily: R Creolin 1·5, Cret. Prep. et. Axung. Porci. āā. 15·0, Ol. Menth. Pip. gtt. 5. Cover with cotton wool after the application.

Allen employs **Antipyretics** if fever rises to 103½° to 104°, giving **Antipyrin** gr. 15 to 20 (for an adult) with **Alcohol**; **Calomel** or **Salines** for constipation; **Alcohol** given freely if there is much weakness, and **Iron** or **Iron** and **Quinine**; **Digitalis** if fever and prostration are severe; **Bromides** for delirium; **Antipyrin** or **Phenacetin** for headache, with cold applications; the diet to be as concentrated and nutritious as possible. Locally he paints the patch and surrounding skin with **Ichthyol** in **Collodion** ʒj to ʒij or ʒj, or for the scalp a watery solution or **Ichthyol Ointment** is used. The band of **Adhesive Plaster** or **Scarification** may be used to prevent spreading. A solution of **Peroxide of Hydrogen** is useful if erysipelas arise from a foul wound.

ERYTHEMA MULTIFORME. *T. Colcott Fox, M.B.*

Roswell Park cites a case in his practice of a middle-aged man of rather free habits, who was operated on for numerous and deep strictures of small calibre. With the beginning of the second week appeared erythema multiforme, which seemed to be exaggerated by each of two successive soundings with a large-sized steel sound. Dermatologists mention the occasional supervention of E. multiforme after surgical operation or irritation, but whether the cause be reflex nervous action or a microphytic injection is uncertain. Villemin in 1886 reported to the Academy of Médicine eleven cases of so-called infectious erythema.

A. A. Lendon, in an interesting paper, mentions that two or more cases may occur in the same house about the same time.

Hutinel and his pupil Mussy write on the erythemata occurring in the course of infective maladies, as enteric fever, diphtheria, choleriform diarrhœa, and measles. They may be of great import, and are due to the action of toxines on the vaso-motor apparatus. He had the unusual experience of observing it twelve times in ninety-five cases of diphtheria. Sanné saw it fifty times in one thousand five hundred cases, Cadet de Grassicourt thirty-seven times in nine

hundred and eighty-two cases. The erythema may be more or less generalized and scarlatiniform, morbilliform, or of larger pattern. Hutinel refers to the tuberculin erythema as an analogous fact. The diagnosis may obviously be very difficult.

REFERENCES.—Hutinel, "Arch. gén de Méd.," Sept. 1892; Mussey, Thèse de Paris, 1892; Roswell Park, The Mütter Lectures, "Ann. of Surgery," Jan. 1892; Lendon, "Austral. Med. Gaz.," Sept. 1890.

ERYTHRASMA.

Synopsis.—(Vol. 1892, p. 232.) Besnier recommends the promotion of exfoliation by applying either **Iodine, Resorcin, Salicylic, Pyrogallic,** or **Chrysophanic Acids,** the strength of which must be adapted to the case.

EXOPHTHALMIC GOITRE. (See also "Goître.")

Græme M. Hammond, M.D., New York.

In a careful analysis of thirty cases of this disease, Dr. Louise Fiske Bryson refers particularly to the symptoms of diminution of inspiratory expansion first described by her in 1889. The expansion on forced inspiration in these cases was found to be diminished in thirteen out of twenty cases. In one case an expansion of only a quarter of an inch could be obtained. The author strongly recommends the use of Dr. Taylor's **Respirator** in the treatment of this disease. As the apparatus works by steam power the patient has the respiratory muscles exercised without effort, and consequently without fatigue. The power of expansion was greatly increased by it and there was an improvement in muscular strength, in the circulation, in tissue metabolism, and in mental and nervous power. The drugs which seemed to act most favourably were **Nux Vomica, Arsenic** and **Digitalis.** The author considers that under favourable conditions the disease tends to recovery in from one to five years.

REFERENCE.—"New York Med. Journ.," July 30, 1892.

Synopsis.—(Vol. 1892, p. 232.) Corning endeavours to lessen blood pressure in the thyroid by the use of the **Warm Bath** for three quarters of an hour daily, and sometimes applies **Elastic Straps** round the legs to hinder venous circulation. He applies **Styptic Collodion** to the thyroid, and an **Elastic Truss,** using **Galvanic Applications** twice daily for from ten to twenty-five minutes. He gives **Aconitine** if pulse is very rapid, **Digitalis, Spartein,** or **Strophanthus,** if not very rapid. The diet is chiefly milk, from 2 to 4 quarts daily, bread and butter, poultry and game in moderation; no alcohol. Bitter tonics—**Arsenic** and **Iron**—may be useful; freedom from excitement and mental strain are essential. Cardew advises weak **Galvanic Currents** (2 to 3 milliamperes) applied for six minutes three times a day, the anode on the nape, and the cathode moved up and down the side of the neck.

EYE (Diseases of). (See also Special Diseases of Eye.)

Synopsis.—(Vol. 1892, p. 239.) Venneman recommends daily introduction of a strip of gauze soaked in **Lactic Acid** for lachrymal fistula; but Lang recommends **Excision of the Fistulous Track.** For lachrymal catarrh, **Zinc Lotion** 2 grs. to oz., **Alum** 4 grs. to oz., or **Perchloride of Mercury** 1 in 2000, may be injected two or three times weekly, but in advanced cases the sac may need incision.

In blepharitis squamosa Gradl uses 2 to 3 per cent. **Sulphur Ointment,** but errors of refraction must also be corrected. In gonorrhœal ophthalmia, with extensive corneal ulceration, Abadie has saved the eyes by repeated use of the **Galvano-Cautery,** together with application of 2 % solution of **Nitrate of Silver** and **Eserine.** For granular lids Orlowsky presses out granulations with the fingers, washes with 1 in 1500 **Sublimate Lotion,** and rubs **Iodoform Powder** into bleeding points, touching the lids on the following days with 2 % **Solution Nitrate of Silver,** or 6 % **Solution Copper Sulphate** in **Glycerine. Yellow Ointment,** 1 part in 120, is used after discharge has stopped. Scott, of Cairo, brushes the lids with **Perchloride of Mercury,** 4 % solution, in **Glycerine** diluted with water. The patient used ¼ % solution thrice daily, and an **Iron Tonic** internally. In severe cases Darier adopts a modification of **Saltler's Method,** then scarifies the lids, and brushes thoroughly with a small hard tooth brush dipped in 1 in 500 **Sublimate Solution** until all granulations are removed. Compresses of the lotion are used for two days, and on the third the lids are everted and washed with the lotion. Biber advises **Yellow Ointment** with massage for bullous keratitis. Mendosa uses **Pure Liquid Carbolic Acid** in infective corneal ulcers with much success. For hypopion, Parisolli evacuates by **Corneal Section,** and irrigates the anterior chamber with warm **Boric Acid Lotion** 2 %. An extensive ulcer should first be burnt with **Galvano-Cautery** before opening the chamber. If surgical interference is not indicated he employs **Eserine, Sublimate Lotion, Constant Hot Compresses,** and **Calomel** internally. In phlyctenular keratitis **Fluorescein Staining** and the **Cautery** are useful Alleman applies ¼ to ½ **Milliampere Current** for a minute, gradually increasing the strength for corneal opacities.

Sympathetic Ophthalmia.—Abadie injected 2 drops **Sublimate Solution** 1 in 1000 into the injured eye, and 1 drop into the sympathizing eye. Lang irrigated the anterior chamber with 1 in 2000 **Sublimate Lotion.**

Tischer displaced an embolism of central retinal artery by prolonged **Massage of the Globe.**

In chronic glaucoma von Schweinitz adopts the prolonged use of **Eserine** and **Pilocarpine.** Large doses of **Strychnine** give temporary benefit, and excessive doses of **Chloral** diminish tension.

For incipient cataract Risley insists on rest from near work, wearing of **Smoked Glasses** in bright light, application of mild **Antiseptic** and **Astringent Lotions** to the conjunctival sac, and moderate use of **Homatropine.** Internally, **Iodide of Potassium** or **Iodide of Iron,** and **Bromide of Potassium** or **Lithium** if headache is a marked symptom. The **Chlorides** may be used for, or alternately with, the **Iodides**; **Eserine** may be used if there is much tension, and **Homatropine** for discomfort without tension.

EYE (Foreign Bodies in Interior of). *William Lang, F.R.C.S.*

Hirschberg gives the following table of measurements to determine the corresponding situation on the external surface of the sclerotic of

a foreign body or cysticercus lying against its inner wall, so that the surgeon may be able to cut down on it with certainty. It is first necessary to determine by means of the perimeter the situation of the scotoma caused by the foreign body in the visual field, and then by means of a pair of compasses, and by the aid of the following table, the desired point can be determined. Still, Hirschberg warns one that it is easy to make a mistake, and thinks that the operation should not be undertaken except when the eye would be otherwise lost :—

Situation of the scotoma in the visual field (temporal half).	Distance of the corresponding point in the retina (nasal half) from the nasal margin of the cornea.	Situation of the scotoma in the visual field (nasal half).	Distance of the corresponding point in the retina (temporal half) from the temporal margin of the cornea.
90°	8mm.	65°	12 mm.
80°	9·5	40°	17
70°	11·5 [Globe)	20°	18
65°	12 (Equator of the	0°	21
60°	13·5		
50°	15·5		
40°	16·5		
20°	19		
0°	21·5 (yellow spot)		

EYE-STRAIN (Causing Nervous Derangements).

Græme M. Hammond, M.D., New York.

Under the title of "Some Prevalent Errors relating to Eye-strain as a cause of Nervous Derangements," Dr. Ambrose Ranney[1] reports eighteen cases of nervous disease which were more or less successfully treated by **Graduated Tenotomies** and **Suitable Glasses**. Of these eighteen cases four were epileptic, two were cases of chronic chorea, one of melancholia, and the rest were cases of nervous prostration, neuralgia, and headaches. The four cases of epilepsy were apparently cured in spite of the fact that no medicinal treatment was prescribed. One case of chorea was entirely cured, the other was so much benefited as to be able to return to work. The case of melancholia with morbid impulses was completely cured, and all the other cases recovered in a very short space of time. From these results the following conclusions are deduced : (1,) Eye-strain may be said to exist whenever errors of refraction or a maladjustment of the tendons that move the eyeballs in unison with each other can be demonstrated ; (2,) The determination of refraction without the use of atropine is unscientific ; (3,) The variety and extent of errors of adjustment of the ocular tendons cannot be positively determined without a phorometer and the judicious use

of prisms ; (4,) The tests for the detection of maladjustment of ocular tendons are of little or no value, until the errors of refraction are detected and rectified by proper glasses, accurately centred to the pupils ; (5,) The methods employed in public institutions of determining refraction by an ophthalmoscope are unreliable and unscientific. Juval's instrument is better ; (6,) The condemnation of any method by those who have not perfected themselves by personal practice with its details has no bearing upon a scientific inquiry ; (7,) The conditions that cause eye-strain (see 1) are usually congenital ; (8,) Eye-strain is a frequent cause, and, perhaps, the most important of all factors that tend to produce functional nervous diseases ; (9,) Statistics drawn from the records of public institutions, where large numbers of patients are examined, are of little or no value in this particular enquiry, because the examinations are not made with care, and proper instruments are not used ; (10,) He has yet to encounter a case of typical sick headache that is not associated with eye-strain. Latent hypermetropia exists to a marked degree in most subjects. Esophoria is also frequently present ; (11,) Esophoria, hyperphoria and hypermetropia are the most common abnormal eye conditions encountered in cases of neuralgia, headache, epilepsy, chorea, insanity, nervous prostration, and other severe types of chronic nervous disturbance ; (12,) Hypermetropia is much less frequently corrected among sufferers than myopia, although it is by far the more important defect in nervous diseases ; (13,) A typical "cross-eye," although a deformity is not, as a rule, the cause of serious nervous disturbance ; (14,) There are two forms of chorea, a sub-acute, which is readily curable, and a chronic, in which the prognosis is unfavourable. The pathology of chorea is unknown. No one has ever proved that an organic lesion was essential to its development ; (15,) The accurate fitting of frames to the face of each patient is a factor too often overlooked in attempts to relieve eye-strain.

REFERENCE.—1"New York Med. Journ.," June 1892.

FEVERS.

Synopsis.—(Vol. 1892, p. 249.) In febrile affections of children with moderate fever, Demme advises **Cold Wet Cloths** wrapped round the trunk, or **Baths** administered twice daily, lasting from five to ten minutes each, the temperature being from 79° to 82°, avoiding antipyretics unless fever reaches 104°.

In articular rheumatism **Salol** may be substituted for **Sodium Salicylate** if vomiting or diarrhœa be present. **Sulphate of Thallin** is useful in typhoid, $\frac{1}{6}$ gr. every two hours for children from three to four years of age, from five to ten years $\frac{1}{3}$ gr., and from eleven to fifteen $\frac{1}{2}$ to $\frac{2}{3}$ gr. In broncho-pneumonia, **Antipyrin** ; in erysipelas, acute rheumatism and

pulmonary tuberculosis, **Acetanilide** and **Antifebrin**. **Arsenic** in intermittent fever (p. 19); **Bonducin** 1½ to 3 grs. in intermittent fever (p. 22); and **Cinchonidine Sulphate**, in doses about one-third greater than Quinine (p. 33), **Gelsemium Tincture** 2 to 10 drops, in intermittent and typhoid fevers (p. 47).

In critical periods of adynamic fevers, **Cactus Tincture** 1 to 5 min. (p. 25).

FILARIA SANGUINIS HOMINIS. *Alexander Crombie, M.D., Calcutta.*

Dr. Patrick Manson describes two new species of filaria sanguinis hominis, which he found in the blood of four out of five negroes from the Congo districts of Africa, which presented characters sufficient to distinguish them from the F.S.H. of Lewis, and from each other.

That which he describes as F.S.H. major, only differs from the F.S.H. of Lewis, in the fact that it has a more delicate sheath, and that no granular aggregation was observed about the middle of the body. The F.S.H. minor presents many points of difference, which are made clear in the following table, and illustrated in *Fig* 12 (p. 228):—

Filaria Sanguinis Hominis. (Lewis.)	*Filaria Sanguinis Hominis Minor*
1. Measures 1-80 in. by 1-3500 in., or thereabouts. (Lewis.)	1. Measures 1-125 in. by 1-5500 in., or thereabouts.
2. Is provided with a sheath.	2. Has no sheath.
3 Caudal end tapers gradually for about one-fifth of the entire length of the animal, and terminates in a sharp or nearly sharp point. (Fig. 3.)	3. Caudal end tapers more gradually for two-thirds of the entire length of the animal, and is abruptly truncated when it has tapered to about one-third of the diameter of the thickest part of the body. (Fig 8.)
4. Cephalic end is rounded off and has obscure oral movements of a pouting character. (Fig. 2.)	4. Cephalic end is either conical or truncated, passing from one form to the other rapidly by a peculiar jerking, extruding, and retracting movement. (Figs 5, 6, 7.)
5. No tongue-like organ visible.	5. From time to time a minute tongue-like organ is rapidly protruded and withdrawn at the extremity of the cephalic end. (Figs 5, 6.)
6. Appears in the blood at night, disappearing during the day.	6. Observes no such periodicity
7. Has a wriggling but no locomotive movement.	7. Has a locomotive as well as a wriggling movement.
8. Many specimens have a granular-looking aggregation about the middle of the body.	8. No such appearance is visible. In fresh specimens the body is, throughout, perfectly homogeneous and transparent.

It thus appears that the F.S.H. of Lewis, and the F.S.H. major of Manson, are of about the same size, that is, their breadth is about the same as that of a red blood corpuscle, whereas that of the F.S.H. minor is rather more than half of this. The apparent absence of a sheath in the F.S.H. minor is a very important distinction. If an equal quantity of the warm urine of the patient be added to the drop of blood to be examined, a process of endo- and exosmosis takes place, by which the sheath of the ordinary F.S.H. becomes distended with fluid, and is made easily discernible. Dr. Manson was, unfortunately, unable to apply this method to the F.S.H. minor, but from what he saw, both in fresh and stained specimens, he was convinced that it had no sheath. The blunt caudal extremity of the latter, and the protrusion from time to time of a minute tongue-like organ, are also very distinctive ; but the most important difference lies in the periodicity manifested by the three species. As is well known, the F.S.H. of India, China, and America, can only be found (so long as the patient follows his ordinary habits) in the cutaneous blood between dusk and dawn, and is most numerous about midnight, in accordance with the nocturnal habits of the intermediary host, the mosquito ; but the embryo of the F.S.H. minor exhibits no such periodicity, and can be found at any hour of the day or night in equal numbers. The F.S.H. major on the other hand, is found only in the day, and not at night. In accordance with this difference in the habits of these parasites, it has been proposed to distinguish them by the adjectives, "nocturna," "diurna," and "perstans."

Dr. Manson is inclined to associate the F.S.H. minor, or perstans, with the mature filaria loa, which is frequently found under the conjunctiva of the inhabitants of certain parts of Africa, the eggs of which are smaller than those of the F.S.H. of Lewis ; and he suggests that the "craw-craw," a papulo-vesicular disease peculiar to negroes, characterized by itching and exudation of a serous-like fluid containing embryo filariæ, may be due to one or other of the species now described by him.

Of the two patients who harboured the F.S.H. minor, or perstans, one was suffering from that peculiar "sleeping-sickness" which affects the inhabitants of the same districts of the African continent, and the other from a mental condition, which was regarded by those having experience of the disease, as merely a maniacal variety of the the same ; and, as it did not break out for five years after he left the Congo, its parasitic origin is not improbable ; but this aspect of the question wants working out.

The distinctions pointed out by Dr. Manson are clearly shown in

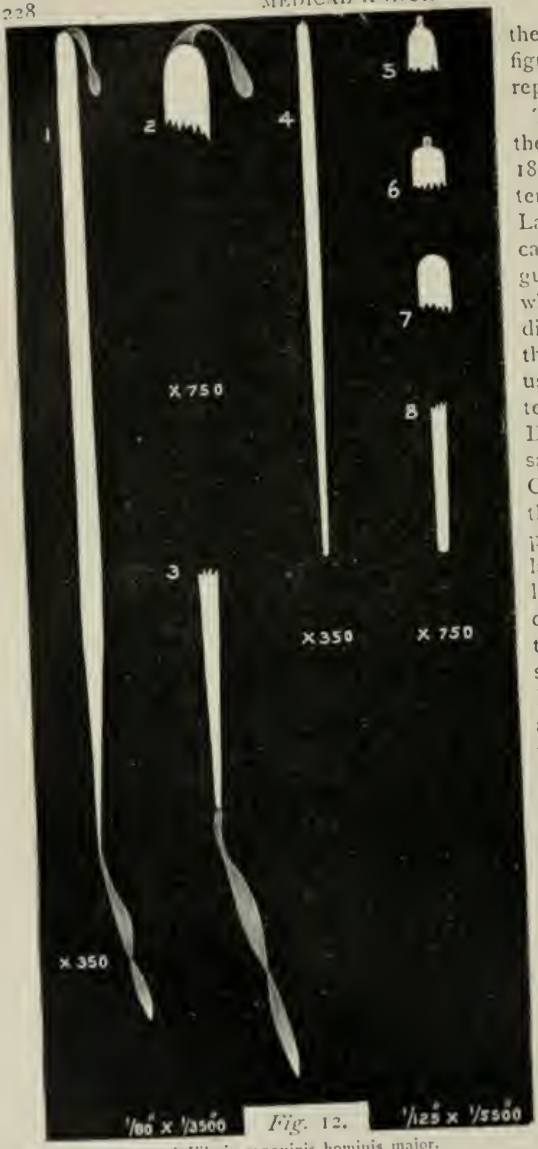

Fig. 12.

(1, 2, 3.) Filaria sanguinis hominis major.
(1, 5, 6, 7, 8.) Filaria sanguinis hominis minor.

the accompanying figures, which we reproduce.

TREATMENT.—In the beginning of 1891, Surgeon Lieutenant-Colonel E. Lawrie reported two cases of filaria sanguinis hominis, in which the parasites disappeared from the blood under the use of **Thymol** internally; and in December of the same year, Surgeon-Captain Walsh, of the General Hospital, Calcutta, related a case of chyluria, in which they disappeared from the urine under the same treatment. Dr. Lawrie gave 1 grain, and, after a fortnight, 2 grains, of thymol every four hours in one case, and 2 grains, increased to 5 grains, thrice daily, in the other; and after two and one month's treatment respectively, the filariæ disappeared from the blood. Dr. Walsh followed the treatment adopted in Dr. Lawrie's second case, and

after a fortnight the urine became clear, and no filariæ could be found in it. In two cases recently under treatment in the General Hospital, Calcutta, thymol proved quite inefficacious. In one of these the drug was given at first in doses of 5 grains thrice daily, but they were rapidly increased till, at the end of three weeks, he was taking 200 grains daily. At the end of that time the worms were as numerous and active as ever. No inconvenience was caused by these large doses, beyond a little giddiness occasionally, during the three days on which he took the maximum dose. In the second case, thymol was given at first in doses of 5 grains thrice daily, quickly increased to 15 grains four times a day. This dose gave rise to a sensation of heat down the track of the œsophagus, but she took 45 grains daily without inconvenience. After a fortnight's treatment, no diminution in the number or activity of the filariæ was perceptible. This patient was also treated with creasote, benzol, guaiacol, and gallic acid, without benefit.

It is probably unreasonable to look for benefit from treatment of this kind. As long as the mature female continues to exist in the lymphatic system, the young which she sheds will be found in the blood. Surgeons are, therefore, directing their attention to the possibility of extirpating the infected glands, and with them the mature worm which inhabits them. This procedure was actually in one case adopted, and carried out by Surgeon-Major Maitland, in March, 1889, with complete success. His patient was a Hindu, aged twenty-four years, who had suffered for eight years from periodic attacks of rigor, fever, and swelling and pain in the right groin, where two tumours of the size of the kidney had formed, which evidently communicated freely with the general lymphatic system. Dr. Maitland dissected out these enlarged and dilated glands. In doing so the sacs were ruptured, and the operation was considerably complicated by the copious leakage of red lymph which took place. Unfortunately, no search was made for the adult worm at the moment, and the removed tissues were afterwards lost; but the result of the operation was so satisfactory as regards the health of the patient, and the cessation of all the previous symptoms, that there can be little doubt that the mature female was removed, together with the diseased tissues. Previous to the operation the attacks were so frequent, sudden, and severe, as to incapacitate the patient for the active duties of life. Dr. Maitland was able to trace his history for two and a-half years after the operation, during which time he had only one attack of fever, accompanied by pain and swelling in the opposite groin.

Unfortunately, the glands affected by the female are not always accessible to the knife; but, under the circumstances of Dr. Maitland's case, their excision offers a rational method of treatment.

REFERENCES.—Manson, "Lancet," Jan. 3, 1891 ; Lawrie, "Lancet," Feb. 14, 1891 ; Walsh, "Ind. Med. Gazette," Dec., 1891 ; Maitland, "Ind. Med. Gaz.," Oct., 1891 ; Crombie, "Lancet," Aug. 13, 1892.

FISTULA (Fæcal). *A. W. Mayo Robson, F.R.C.S.*

If a fæcal fistula forms after an abdominal operation, it usually closes spontaneously, but should this happy termination not ensue, the use of the actual cautery will often, when aided by suitable general and local treatment, lead to the desired end.

There are, however, some cases which fail to yield to these simpler methods, and this is not unfrequently the case after the evacuation of a perityphlitic abscess containing fæcal matter ; for as Mr. Treves has pointed out, such abscesses usually indicate a direct opening into the cæcum, whereas the ordinary appendical abscess, though possessing an offensive odour, does not as a rule contain fæcal material.

The surgical treatment of these cases, when spontaneous closure does not occur, is usually unsatisfactory. Cæcal fistulæ are very difficult to deal with by operation, no matter at what stage the attempt at closure is undertaken. The operations usually performed in a case of fæcal fistula, in whatever way it originates, are either paring the edges and suture of the opening in the bowel or resection of the intestine. The former method often fails, and is as a rule not easy of accomplishment, for the margins of the perforation after a time become thickened and indurated, the bowel itself being surrounded and bound down by adhesions, and often lying at some distance from the surface. Resection of the intestine is a proceeding which is hardly practicable when the cæcum is the part involved ; moreover, it is a tedious and a difficult operation, and one which is not only frequently unsuccessful, but is also attended by a high rate of mortality. The operation of "lateral anastomosis" is a method of treatment which appears to be peculiarly applicable to cases of this nature, for by establishing a fistulous communication between coils of intestine above and below the seat of perforation, the passage of the fæces can be diverted ; and the fistula, being no longer irritated by the escape of fæcal matter, is therefore placed in a more favourable condition for healing. An advantage of this method is that we are enabled to operate upon the bowel at some distance from the seat of disease, where it is free from adhesions, and where its walls are in a perfectly healthy condition.

A good example of the success of this procedure is reported by Mr. F. A. Southam in the "Lancet" for Oct. 8th, 1892. Early this year I adopted the same procedure in a persistent case of fæcal fistula, and found it an easy matter to connect the ilium and colon by means of one of my decalcified bone bobbins (*vide* pp. 240, 241).

FRACTURES.

F. S. Eve, F.R.C.S.

Treatment of recent Fracture of the Patella.—Mr. A. E. Barker[1] recommends the following procedure: Every precaution having been taken to secure perfect asepsis, the lower fragment of the patella is steadied at either side by the left forefinger and thumb of the operator, who stands on the right side of the patient. A narrow-bladed knife is then thrust into the joint edge upwards, exactly in the middle line of the ligamentum patellæ at its attachment to the lower fragment. As this knife is withdrawn cutting upon the lower edge of the latter, the skin wound is slightly enlarged to about two-thirds of an inch. Through the wound thus made, a stout-handled pedicle needle is thrust into the joint behind the lower fragment, and is pushed upwards behind the upper fragment and through the quadriceps tendon in the middle line as close to the border of the bone as possible (*Fig.* 13). The upper fragment at this moment should be forced down and steadied. When the point of the needle is seen under the skin the latter is drawn upwards, and an incision is made upon it and for two-thirds of an inch downwards to the edge of the patella, the knife entering the joint in the middle line over the needle. The eye of the needle is now threaded with stout perfectly sterilized silk or wire (*b*), and is withdrawn, carrying the thread of course behind both fragments. The needle, again unthreaded, is now passed through the same skin wound below and out of the upper wound, but this time in front of and close to both fragments (*Fig.* 14). Here it is threaded with the other end of the suture (*c*), and is withdrawn. The thread now forms a loop over the upper border of the upper fragment, both ends hanging out of the lower wound, one arm of the loop passing, of course, behind, and the other in front of both fragments. The upper

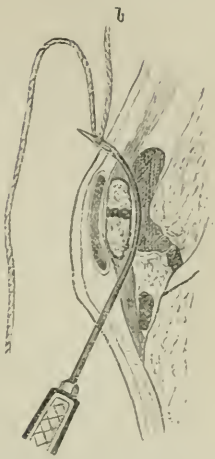

Fig. 13.—*a*, The needle in its first position behind the broken fragments receiving one end of the silk *b*.

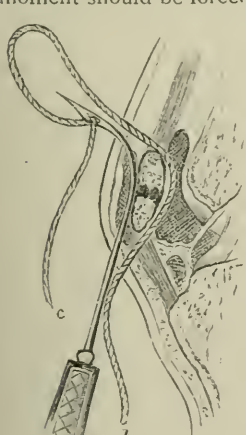

Fig. 14.—*a*, The needle in its second position in front of the broken fragments receiving the other end of the silk *c*.

fragment is then forced downwards by an assistant until its broken surface touches that of its fellow, against which it is rubbed by lateral and antero-posterior movements until it is felt that any blood-clot or other material is dislodged, and they are both in position and grating. The operator then pulls firmly upon the suture, and ties or twists its two portions upon the lower border of the patella. The projecting ends are then cut off, and the small skin wound closes over the knot. Neither of the wounds above or below the patella requires drainage or suture; they are simply covered with an antiseptic pad; the whole joint is then enveloped in salicylic wool and evenly bandaged, and the limb is put up on a long back splint. When the wounds are made into the joint, as much blood and clot are squeezed out through them as possible.

Mr. Barker prefers silk to silver wire for the suture. The after-treatment consisted in keeping the patients in bed, with an ice-bag over the knee until the skin wounds were healed, which took place in all under one dressing and without a drop of suppuration. At the end of eight or ten days the splint was removed, and the patients were allowed to move the knee a little while in bed. After the lapse of a fortnight they were allowed to sit up a little with a splint on, which was removed on returning to bed. In none of the cases was there anything to give cause for anxiety in the course of the case, and at the end of five weeks all were able to walk firmly, and no trace of the line of union in the bone could be made out.

Butcher[2] objects to Barker's method of treating by operation recent cases of fracture of the patella, on the ground that the operation is not in reality subcutaneous, since, in the first place, the joint is opened; and, in the second place, a ligature is passed into the joint; and, finally, the knot is placed in front of the knee in a very inconvenient position, especially if a wire ligature be employed and the patient's occupation requires much kneeling.

The operation proposed by Butcher is as follows: The patellar fragments are first adjusted by the hands of assistants; then a stout, well-curved needle on a handle is passed through the skin about the centre of the outer side of the knee, and pushed slowly subcutaneously until it reaches the upper border of the patella. The needle is now thrust through the quadriceps tendon as near to the upper border of the bone as possible; then the point of the needle is depressed, and the skin on the inner side of the joint is drawn upward, and the point of the needle, armed with sterilized silk, is forced through the skin on the inner side of the joint; the needle is then withdrawn, leaving the silk in position. The needle is again passed as before from the outer

side of joint through the same puncture in the skin as previously, and directed slightly downward until it feels the lower edge of the lower fragment of the patella ; it is then thrust through the ligamentum patellæ, and the skin on the inner side of the joint being drawn downward, the point of the needle is then thrust through the same puncture, as will be seen occupied by the silk. The needle having been passed unarmed, is now threaded with the silk end, which protrudes from the puncture, and is withdrawn, with the result that the silk disappears through the opening on the inner side of joint, and the two ends appear at the same puncture on the outer side of the knee. The ends of the ligature are drawn tightly together and knotted, and the knot slips through the puncture in the skin on the outer side, and thus a permanent ligature is passed around the patella subcutaneously. There is no wound to dress, and the joint is not interfered with. The patient is kept in bed on a posture splint for about ten days.

Compound Fractures.—Mr. Mansell Moullin[3] advocates the treatment of compound fractures into joints by immersing the injured part in a bath of **Corrosive Sublimate** at the temperature of the body. If the accident were recent and the wound clean, the strength of the solution should be 1 in 10,000, with a few drops of hydrochloric acid added, and two hours' submersion night and morning would be sufficient. If, on the other hand, the injured part was foul, or some time had elapsed, and inflammation had already set in, the bath should be continuous, night and day, for forty-eight hours, and the strength of the solution should be 1 in 1000 for the first two. Over thirty primary cases of severe injury had been treated in this way with perfect success, except in two instances, in both of which the failure was traced distinctly to an escape of sewer-gas. Almost the same could be said of the secondary cases ; but in one, in which a period of five days had been allowed to elapse, a secondary abscess formed (without a rigor or other sign of pyæmia) in the iliac fossa on the opposite side of the body.

Dr. Herman Mynter[4] adopts the following plan of treatment founded on that advocated by Volkmann in 1877. He says : A compound fracture is simply a contused and lacerated wound, as little inclined to heal by first intention as any other contused and lacerated wound, not to mention that the wound is often, even in simple punctures, filled with dirt, the sharp ends of the bones having gone through the clothing and into the ground.

To seal such a wound with collodium is as unscientific as it is dangerous, even if it occasionally heals without any accident occurring.

On admittance a patient with a compound fracture is anæsthetized,

and the part then as thoroughly disinfected as can be done with soap, brush, razor and corrosive sublimate. The wound, even if a simple puncture, is thereafter freely incised, an Esmarch's bandage having been previously applied. All crushed and lacerated tissues are thereafter thoroughly removed with curved scissors, and that whether they be parts of skin, subcutaneous tissue, fascia or muscle. Every pocket is opened along its whole length and treated in the same way. If deep-seated pockets be found between the muscles, large openings are made in the most convenient spot in order to deal intelligently with them. Loose splinters are removed, and if the fracture is severe or comminuted, the ends of the bones are forced out through the wounds, thoroughly cleaned, and the blood-clots removed between and behind them. Sharp points are removed with bone scissors, and in comminuted fractures the bone-ends are occasionally sawed off transversely.

The Esmarch's bandage is thereafter removed in order to find and ligate bleeding arteries, and then reapplied. The wound having been thoroughly disinfected with corrosive sublimate (1-2000), and the fractured bones having been brought into apposition, the different wounds are closed with catgut sutures, with the exception of half an inch in each, which is left for drainage. An antiseptic dressing and plaster of Paris case are then applied, and the Esmarch tourniquet removed. Silver sutures and drainage tubes are superfluous.

REFERENCES.—[1] "Brit. Med. Journ.," Feb. 27, 1892; [2] "Therapeutic Gazette," June 15, 1892; [3] Ibid., Dec. 15, 1891; [4] "Annals of Surgery," April, 1892.

FURUNCULOSIS.

Synopsis.—(Vol. 1892, p. 254.) **Poulticing**—the surface of the poultice and skin being brushed with 1 % **Sublimate Solution** or 4 % **Boric Solution**. During the night cover the boils with a paste of **Zinc Oxide, Vaseline**, āā. q.s., **Boric Acid** 4 % spread on lint. Avoid early squeezing, and only slowly developing furuncles should be incised. **Corrosive Sublimate** baths assist in preventing auto-inoculation. Avoid scratching and rubbing. **Citrine Ointment** applied early is said to abort furuncles. Veiel condemns Cathartics as useless, and also Arsenic and Calcium Sulphide.

GALL BLADDER (Surgery of). *A. W. Mayo Robson, F.R.C.S.*

Gunshot wounds of the gall-bladder are very rare. Courvoisier[1] has mentioned six cases, of which two died within a few hours, a third in six weeks from pyæmia, and a fourth from septicæmia. The case related by Hans Kehr[2] is, therefore, of considerable interest, as immediate laparotomy, with suture of a bullet wound in the gall-bladder of a man aged thirty, was followed by recovery.

Affections of the gall-bladder and bile ducts requiring surgical interference are, in by far the greater number of cases, dependent on

gall-stones which, as is well-known, though not sufficiently appreciated, may produce most serious ailments, many of which are only amenable to surgical treatment.

I have operated on over sixty cases for cholelithiasis, and among the complications and dangers for which help has been sought, have been : (1,) Repeated attacks of biliary colic—so-called "spasms" without jaundice ; (2,) Biliary colic with persistent jaundice and its consequences, such as hæmorrhage ; (3,) Intermittent pyrexia with jaundice and pain ; (4,) Persistent vomiting, with such serious digestive disturbances as to threaten death from inanition or exhaustion ; (5,) Acute intestinal obstruction due to impaction of large gall-stones ; (6,) Simulation of intestinal obstruction due to irritation and pain ; (7,) Localized peritonitis, with or without ulceration of the bile passages ; (8,) Perforative peritonitis ; (9,) Septicæmia due to ulceration of bile passages ; (10,) Abscess of liver ; (11,) Empyema of gall-bladder ; (12,) Dropsy of gall-bladder ; (13,) Abscess of abdominal walls ; (14,) Pyelitis of right kidney ; (15,) Collapse due to intense pain. The cause of the mischief, the gall-stones, may be found anywhere in the biliary tract, and although usually discovered in the gall-bladder or in the cystic or common ducts, they may be found in the hepatic duct before it joins the cystic, or even in its ramifications in the liver.

Where there is neither jaundice nor distension of the gall-bladder, and when so-called "spasms" are frequently recurring and do not yield to medical treatment, the gall-stones will usually be found in a shrunken gall-bladder or in the cystic duct, but where jaundice is present, the stones will probably be found in the common duct ; and in either of these cases my almost invariable experience has been to find numerous and very firm adhesions, showing that the attacks have been frequently associated with local peritonitis. Where there is distension of the gall-bladder associated with pain but without jaundice, one large gall-stone or several smaller ones will probably be found blocking the neck of the gall-bladder and the cystic duct.

Where there is persistent jaundice with distension of the gall-bladder and without marked pain, I am always suspicious of malignant disease, especially if there is an absence of the intermittent pyrexia which usually co-exists with the presence of gall-stones in the common duct, and, as operation in malignant cases is undoubtedly very much more dangerous than in simple cholelithiasis, the suspicion should be borne in mind, although in many of these cases an exploratory operation may be undertaken in the hope of finding something that can be relieved, or of relieving the cholæmia by diverting the course of the bile.

There is decidedly room for improvement in the diagnosis of cholelithiasis, especially when the question of malignant disease has to be taken into consideration ; and in many cases it is almost impossible to differentiate between the mechanical blockage of the common bile duct from malignant disease which has not advanced far enough to produce cachexia and that from gall-stones, although as a rule in the latter there will be a history of preliminary attacks of spasms of pain preceding the jaundice and of intermittent pyrexia, with absence of enlargement of the gall-bladder.

The last mentioned sign is worth remembering, as all the cases of malignant disease with jaundice on which I have operated have had distension of the gall-bladder so as to form a perceptible tumour.

One symptom not usually noticed, *i.e.*, pain on the left side of the abdomen radiating to the left scapular region, is worth noting. I have operated on three cases where this symptom was present. In two I found gall-stones, and in one cancer of the gall-bladder ; but in all three I found numerous adhesions to the stomach, which was fixed firmly to the gall-bladder, thus probably explaining the unusual position of the pain

Of the operative measures undertaken for diagnosis, sounding and aspiration of the gall-bladder must be referred to.

The so-called "sounding for gall-stones" either by means of a probe passed through a cannula or by the fine needle of an aspirator, is both uncertain and dangerous, and it seems to me that it may more safely be replaced by a small exploratory incision, which can be extended for treatment if required.

Aspiration of a distended gall-bladder through the unopened abdomen, though apparently a simple procedure, is not unattended with danger, death having followed in more than one instance, and in only very exceptional cases can it do any good.

Here, again, I infinitely prefer to make a small exploratory incision, then to empty the gall-bladder by the aspirator, and afterwards to explore the bile passages with the fingers.

If, however, aspiration without exploration be decided on, a small needle should be used and the cyst emptied as far as possible, in order that intra-cystic tension may not lead to extravasation through the needle puncture.

Catheterism of the Biliary Passages.—In the February number of the "Revue de chirurgie," Dr. Terrier and Dr. Dally[4] conclude an article on catheterism of the biliary ducts in conjunction with cholecystotomy, or in the treatment of the case after the performance of that operation. This procedure is easier in pathological

cases, especially those in which the passages are dilated in consequence of retention of bile, than in experimental trials on the cadaver. In many cases it will be found difficult on account of curvatures of the cystic duct, or of the persistence of the valves, or of the cystic duct opening on the lateral wall of the gall-bladder. In some cases the difficulties will be insurmountable, while in others the exploration will be found quite easy. To formulate rules is impossible ; one can only be guided by one's anatomical knowledge. Forced catheterism, even with the finger placed under the liver in the abdomen, seems to be dangerous under all circumstances. Our information is as yet not sufficient to enable us to appreciate the value of *cathéterisme à demeure*. The instruments employed should always be sterilized.

Of the proper operative procedures, cholecystotomy, cholelithotrity, cholecystenterostomy, cholecystectomy and incision and suture of the ducts have to be considered. I think most surgeons are agreed that cholecystotomy is the operation *par excellence* in the treatment of gall-stones, and, although, as often happens, where there are adhesions and a shrunken gall-bladder, it is an operation of considerable difficulty, statistics prove that in the absence of malignant disease and persistent jaundice it is a procedure attended with little risk ; for instance, out of thirty such cases on which I have operated, I have to record recovery in all. Even in the presence of cholæmia, the mortality, in the absence of malignant disease, is very small, for out of fifteen cholecystotomies for jaundice with gall-stones, in the absence of cancer, I have not lost one patient as the result of the operation.

I think I am able to suggest as worthy of further trial, a means of averting danger from hæmorrhage in these cases, but, as yet, I have only had the opportunity of putting it in practice in one operation. In this example it was considered advisable to explore the liver and bile passage in a case of persistent jaundice of two years' duration, which it was thought might be due to some removable obstruction, but where hæmorrhages from the nose and bowel and ecchymoses under the skin made me fear that bleeding at the time of operation and subsequently might prove a serious difficulty.

Chloride of Calcium in 15-grain doses was given every four hours for two days previous to operation, and whether it was due to the use of the drug or not, the fact remains that I had not a single ligature to apply when operating, and the spontaneous hæmorrhages ceased, and did not return, although the jaundice persisted for some time after operation.

The use of calcium chloride was suggested to me by a paper of

Dr. A. E. Wright's[5]. I may mention that I have employed calcium chloride in uterine and other hæmorrhages with success.

Although cholecystotomy has undergone various modifications, such as operation *a deux temps*, and immediate suture of the opening in the gall-bladder, the so-called "ideal" operation, I very decidedly prefer the old method in which the gall-bladder is drained.

Instead of suturing the edges of the incision in the gall-bladder to the skin, I fix it to the aponeurotic layer of the abdominal wall, and thus avoid the danger of a fistula, as between the opening in the gall-bladder and the skin, is a layer of tissue which soon becomes covered with granulations, and the contraction in healing secures closure. I prefer the vertical incision, and have never found it needful to employ any other. The so-called "ideal" operation, *i.e.*, closure, of the gall-bladder, is only applicable to cases where the ducts are clear, which may be known by filling the gall-bladder and compressing it to see if the fluid will pass on into the bowel. Statistics have apparently proved this method to be dangerous, but I think, as recently reported cases[7] would seem to prove, that the danger may be overcome, first, by a proper selection of cases, and, secondly, by careful suture, first of the margins of the incision and then of the peritoneal surfaces.

To my mind, drainage of the gall-bladder not only presents the advantage of treating the vesical catarrh by securing physiological rest, but in case the ducts have not been cleared, it becomes possible to apply through the fistula hot water or some solvent solution directly to the concretions. Where the gall bladder is shrunken and cannot be brought to the surface, I have usually been able to tuck the parietal peritoneum down, and suture it to the margins of the incision in the viscus, but in several cases where I could not do this, I utilized the omentem, suturing it to the gall-bladder and to the parietal peritoneum, thus occluding the peritoneal cavity. Where occlusion in this way cannot be effected, the insertion of a drainage tube into the gall-bladder without suture of the margins to the wound seems to be efficient.

In such cases I have had no untoward results, as it is apparently easier for effused fluids to discharge directly through the tube than to pass among the viscera; since it is to be borne in mind that intra-abdominal tension is constantly present, and that probably within from twenty-four to forty-eight hours the drainage track from the gall-bladder to the surface is quite formed, and no longer communicates with the general cavity of the peritoneum. Hence I can see no need to follow the plan suggested by Mr. Knowsley Thornton[8] of performing suprapubic drainage, in any of these operations on the gall-bladder or

bile ducts. In clearing the ducts of concretions, the surgeon must be guided by circumstances. As a rule, forceps within the duct and the fingers outside, will overcome any difficulty in the cystic duct, and occasionally stones may be worked backward by the fingers even from the common duct, as I proved a short time ago, where, after trying ineffectually to crush two stones, the size of small nuts, between the finger placed in the foramen of Winslow and the thumb placed in front of the common duct, I found that I could work them backward, and in a short time I brought them out through the incision in the gall-bladder. Not infrequently the common, or even at times the deeper part of the cystic duct, cannot be cleared in this way, and then cholelithotrity, first performed by Mr. Lawson Tait, may be attempted. I have published a number of cases[9] in which I have crushed stones in the ducts, and afterwards found the fragments in the motions. I always first try to crush them between the finger and thumb, and failing this, employ forceps covered with india-rubber. At times this method will fail, and then incision of the duct and removal of the concretion as first performed by Mr. Thornton[8], [11], [13], [16], may be done, the opening in the duct being sutured, and the right kidney pouch drained.

In two cases I have found the gall-bladder displaced and projecting into the right loin, as if the liver had been rotated to the right : in both of them I was able to crush the stones and clear the ducts without opening the shrunken gall-bladder, *i.e.*, to perform cholelithotrity without cholecystotomy. In one case after cholecystotomy with crushing of calculi in the common duct, the fragments did not pass until I injected a few drops of a solution of turpentine in ether into the fistula : great pain followed, the duct became patent and the fistula closed, the patient having remained well since. The result in this case was probably rather due to the contractions set up in the duct, than to the solvent action of the remedy used, and I cannot, on account of the severe pain set up for some hours, recommend unqualified, its employment by others. Mr. J. W. Taylor's method of syringing hot water into the fistula night and morning in order to soften the stone, or to force on the fragments, is probably a more efficient and safer method ; although I have not found the solution of taurocholate of soda which he advised, to answer any better than simple hot water ; and even in the test tube it seems to be a poor solvent of gall-stones.

The following conditions seem to me to be the indications for cholecystotomy : (1,) Frequently recurring biliary colic without jaundice, where medical treatment has failed ; (2,) In per-

sistent jaundice where the onset was ushered in with pain and where recurring pains with or without ague-like attacks render it probable that the cause is gall-stones in the common duct ; (3,) In distended gall-bladder from impaction of calculi in the ducts ; (4,) In empyema of the gall-bladder ; (5,) In persistent jaundice with enlargement of the gall-bladder dependent on some obstruction in the common duct, even where the cause cannot be clearly made out ; but in such cases the increased risk should be borne in mind, as malignant disease may probably be the cause.

Cholecystectomy.—I have had three cases in which cholecystectomy has had to be done, in consequence of stricture of the cystic duct, leading to an accumulation of mucus in the gall-bladder, and distress when the fistula was allowed to close.

After removal of the gall-bladder, complete recovery ensued in all. The operation is not difficult, and, in my last case, a single fine silk ligature around the cystic duct answered quite as well as the more complicated procedure which I previously adopted, of covering the stump with a peritoneal flap.

As a precautionary method I used a drainage tube for twenty-four hours, but probably this was unnecessary. I think cholecystectomy for cancer can very seldom be called for. In the only case where I have opened the abdomen for cancer of the gall-bladder, the disease had already so involved the neighbouring parts that a radical operation was out of the question.

The following conditions seem to me to be the indications for removal of the gall-bladder : (1,) Where, after cholecystotomy, a mucous fistula persists, dependent on stricture of the cystic duct ; (2,) Where, under similar circumstances, owing to accumulation of fluid in the gall-bladder, the pain recurs as soon as the fistula has closed ; (3,) In cancer, if the disease be limited to the gall-bladder. Wherever there is obstructive jaundice cholecystectomy is contra-indicated.

Cholecystenterostomy, though not an easy operation, seems to be a successful one, for out of eight reported cases, seven recovered. My first cholecystenterostomy was performed in 1889 for biliary fistula due to stricture of the common duct, and the patient is at present in excellent health. I have recently adopted a modification in the operation, which will, I believe, make it both more easily and safely performed. The union between the two viscera is effected by means of a small decalcified bone tube, shaped like a cotton bobbin, as shown in the diagram (*Fig.* 15). Only two continuous sutures are required, and the operation can be done quickly. The gall-bladder can be sutured either to the duodenum or to the colon, preferably to

the former, but if that be impossible, to the latter. The dilated common duct has also on one occasion been opened by Dr. Sprengel[20] and connected to the duodenum, where the obstruction could not be removed. In some exceptional cases it may be found impossible to clear the common duct, and impracticable to perform cholecystenterostomy, as in cases where the gall-bladder is atrophied and shrunken, although it may be possible to suture the dilated cystic or common duct to the bowel and establish a fistula between the two.

Indications for cholecystenterostomy: (1,) In closure of the common duct from stricture, where the jaundice is and must be persistent, unless another channel for the bile can be made; (2,) In tumour producing obliteration of the lumen of the common duct, thus leading to persistent jaundice. But if the tumour be made out to be malignant, the simpler procedure of cholecystotomy had better be performed; (3,) In cases where the gall-bladder is distended, and it is found impossible or impracticable to clear the common duct of gall-stones.

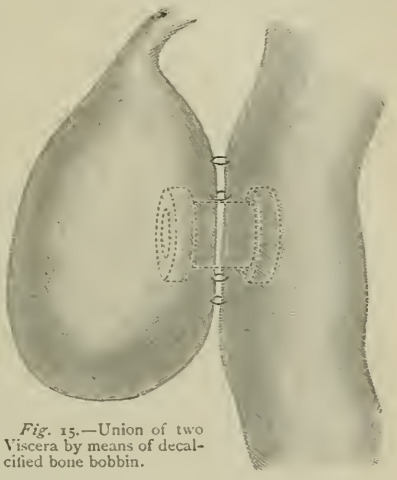

Fig. 15.—Union of two Viscera by means of decalcified bone bobbin.

At a meeting of the London Medical Society on April 4th, 1892, Mr. Knowsley Thornton, among other cases, read notes of a probably unique case of removal of a sarcomatous growth from the inside of the cystic duct, and of two cases in which mere exploratory incisions were made, and the following summary of the conclusions arrived at by the author was given: (1,) A properly conducted exploratory incision was free from risk, and might give valuable information leading to a scientific and successful after-treatment, even in cases in which no stone was found. Such exploration was, however, only justifiable after the most thorough trial of dietetic and medicinal treatment; (2,) The ducts were as completely within the sphere of successful manipulative and operative treatment, when such were needful, as was the gall-bladder itself; (3,) Stones of moderate size impacted in the ducts were better treated by needling and crushing, either by finger and thumb or by forceps pressure. Larger stones by incision, com-

plete removal, and after-suture of the duct wall ; (4.) In cases in which *débris* was left in the ducts the gall-bladder should be opened, sutured into the abdominal incision, and drained ; (5.) In cases in which the ducts were incised and sutured a draining-tube should be passed into the peritoneum beside the sutured duct, and the gall-bladder also drained externally ; (6.) In a well-marked case of repeated attacks of gall-stone colic, with recurring distension of the gall-bladder, it was better to operate early and before there was a chance of injury to the duct wall by impaction, and before the stone had reached the common duct. Such cases recovered rapidly, and there was every prospect that experience would show that complete intra-peritoneal suture of the wound in the gall-bladder would be safe and the rule of the future when operation preceded damage to the ducts from impaction.

REFERENCES.—[1] "Gall-stones and their Treatment," by Mayo Robson (Cassell & Co.) ; [2]Hans Kehr, "Brit. Med. Jour.," Epitome, Sept. 3, 1892 ; [3]A. E. Wright, "Brit. Med. Jour.," Dec. 19, 1891 ; [4]Terrier and Dally, "Revue de chir.," Feb. 1892 ; [5]J. C. Reeve, "New York Med. Jour.," May 28, 1892 ; [6]J. M. Price, Ibid., June 2, 1892 ; [7]Korte. "Brit. Med. Jour.," June 11, 1892 ; and "Annals of Surgery," May, 1892 ; [8]J. Knowsley Thornton, "Lancet," March 7, April 4 and 11, 1891, and April 9, 1892 ; [9]Mayo Robson, "Med Chron.," Oct. 1891 ; [10]Helferich, "Therap. Gaz.," April 15, 1892 ; [11]Robert Abbe, "New York Med. Jour.," Jan. 30, 1892 ; [12]M. Terillon, "Thérap. Chir.," June 15, 1892, and "Ann. of Surg.," August, 1892 ; [13]M. Terrier, "Therap. Gaz.," and "Ann. of Surg.," August, 1892, "Le Propos Médicale," April 23, 1892 ; [14]Dr. Goodhart, "Brit. Med. Jour.," Jan. 30, 1892 ; [15]Naunyn, "Practitioner," August 1892, p. 134 ; [16]Kuster on Choledochotomy "Med. Chir.," July, 1892 ; [17]Abbe, Ibid., [18]Mayo Robson, "Brit. Med. Jour.," July 16, 1891 and "Medical News," August 17. 1892 ; [19]Ferrand, "Jour. de Médic.," 1892, Hepatic colic treatment by glycerine ; [20]Sprengel, Choledochenterstomy "Ann. of Surg." June, 1892.

GANGRENE.

F. S. Eve, F.R.C.S.

Mr. Hutchinson's advice to amputate in all cases of senile gangrene at the lower third of the femur, is strikingly supported by an analysis by Heidenhain, of twenty-five cases of senile and diabetic gangrene occurring in Kuster's clinic. Kuster commenced with low amputations, but was always obliged to re-amputate higher up, on account of recurrent gangrene of the wound, and was in that way, little by little, forced to amputate in or above the knee-joint in every case of gangrene of the lower extremity, in which the gangrene extended to the dorsum or plantar surface of the foot.

Thirteen primary amputations were performed below the knee,

including exarticulations, as Chopart's and Lisfranc's. Of these, only two amputations healed, two died of gangrene of the flaps, and nine were re-amputated at or above the knee.

Of seventeen primary amputations at and above the knee, two healed by first intention, three after moderate marginal flap gangrene, one after severe flap gangrene, three after re-amputations, and eight died of diabetic coma and heart complications.

Of ten secondary amputations at and above the knee, three healed by first intention, six after marginal gangrene, one after re-amputation and none died.

Of the eleven diabetic patients, five died, four of coma and one of heart complications.

All patients in which amputation was done at or above the knee recovered, if they did not suffer from diabetes and albuminuria or from heart troubles, two cases of death following gangrene excepted, which were amputated before the antiseptic period.

In later years every amputated limb has been examined and, as a rule, an old thrombus was found, occluding either the femoral artery or the anterior or posterior tibial arteries, and explaining the cause of the recurrent gangrene after low amputations. The thrombus was most frequently found in the popliteal artery.

As regards the relation of diabetes to gangrene, all authors agree on the following points: (1,) Diabetic tissues possess an increased inclination to inflammation and gangrene; (2,) Arterio-sclerosis is frequent in diabetes; (3,) Diabetic gangrene occurs frequently in old persons, never in young persons below twenty-five years; (4,) Diabetic and senile gangrene are clinically identical.

REFERENCE.—"Annals of Surgery," February, 1892.

GASTRIC ULCER. *Frank J. Wethered, M.D.*

Dr. Pope,[1] of Leicester, records the results which he has obtained in the treatment of gastric ulcer, by means of **Resorcin.** He believes that its analgesic property is the most valuable, as by this means the stomach is able to tolerate food, when otherwise it would be excessively sensitive, ulcerated, or eroded. The antiseptic effect which it produces is valuable in the prevention of fermentation.

The ordinary dose is 5 grains three times a day. Pope also states that he has found resorcin of value in gastric cancer. Under its use he has seen foul tongues become clean, and stomachs, which formerly rejected almost all food, become tolerant. Under these circumstances, however, it is a drug which modifies the symptoms rather than the disease itself.

Dr. Mackey,[2] of Brighton, has also tried this method of treatment

in fifteen cases, using 5 grains three times a day. It proved very valuable in all but one case. Its employment is based upon the fact that it is antiseptic, analgesic, and hæmostatic.

REFERENCES.—[1] Pope, "Prov. Med. Jour.," May 2, 1892; [2] Mackey, "Lancet," vol. i., p. 570, 1892.

Synopsis.—(Vol. 1892, p. 255.) Dreschfeld advises **Turpentine** for profuse hæmorrhage, and feeding for some days subsequently by rectum only. To relieve pain powdered **Bismuth** and often **Nitrate of Silver** prove useful. Large doses of **Alkalies** often relieve hyperacidity. **Enforced Rest in Bed** for some weeks, application to epigastrium of very **Hot Poultices**, and a **Well-regulated Diet** must be persisted in for a long time.

GLAUCOMA. *William Lang, F.R.C.S.*

The following rule, according to Schweigger, should always be followed: "As soon as the existence of a glaucoma has been demonstrated an iridectomy must be performed. One may depend on a favourable result with this operation, whilst sclerotomy is not an infallible remedy." This rule is applicable not only to hydrophthalmos, but even to hæmorrhagic glaucoma. In the glaucoma of infancy Professor Haab, of Zurich, finds that sclerotomy gives the best results. He makes the incision with a broad Graefe's knife, as close to the ciliary insertion of the iris as possible; consequently the section is made at a distance of two to four millimètres from the corneal margin, varying with the depth of the anterior chamber. The operation will generally have to be repeated.

GLEET. *F. S. Eve, F.R.C.S.*

Dr. J. W. S. Gouley[1] gives the following practical directions for the local treatment of chronic urethritis or gleet: "In cases of simple chronic urethritis, in which there are no granulations or submucous exudation, but only congestion of the mucous membrane, diffuse or in patches, particularly when this congestion is limited to the "antebulbar" region, mild astringent irrigations are indicated. It is wise, however, to keep the patient under close observation for a week or ten days, and during that time to make no local applications whatever, for the general treatment may suffice to cure the urethritis. If then the discharge persists, the urethra, for the first five or six days, should be irrigated, only once daily, with 10 or 12 ounces of a solution of **Boric Acid** or **Biborate of Sodium**, 5 grains to the ounce. Afterward **Chloride of Zinc** should be substituted, but the zinc salt solution should not exceed ½ a grain to the ounce. The quantity of fluid used for each irrigation should be about 10 ounces. As a general rule, this form of chronic urethritis yields rapidly to the irrigations, and in the course of a few weeks is well.

Chronic urethritis with granulations demands a somewhat different treatment, although in the beginning the irrigations with boric acid solution should be used for several days. If the granular urethritis be "antebulbar," the best modifier that can be used is the **Nitrate of Silver** in solution of ½ a grain to the ounce, 1 grain to the ounce, and seldom increased to 2 grains to the ounce. The amount of fluid should not be less than 6 ounces, but should be used only once every four or five days.

In granular urethritis of the membranous and prostatic regions, particularly in case of coexisting chronic gonecystitis, the strength of the nitrate of silver solution may, with advantage, be increased to 3, 4, or even 5 grains to the ounce, and 3 or 4 ounces only need be used every four or five days. The bladder should contain a few ounces of urine in order to insure the quick decomposition of the silver salt. It is well-known that when fluid is thrown slowly and without undue force through a catheter as far as the bulbo-membranous junction, it returns and escapes at the meatus, but that when the catheter is passed into the membranous region none of the fluid escapes externally, but all of it enters the bladder. Two days after each urethral irrigation, a steel sound of moderate size should be cautiously introduced as far as the bladder.

There are cases of granular urethritis that obstinately resist this treatment. These cases require direct applications to the granulation tissue, to accomplish which the use of the urethroscope becomes necessary. The granulations thus brought to view are pencilled with a solution of nitrate of silver (10, 20, or 30 grains to the ounce) every four or five days until they disappear. Sulphate of copper and other substances have been used for the purpose, but are all inferior to the nitrate of silver.

Strong solutions are not well borne, are even mischievous, and therefore contra-indicated, in chronic urethritis anterior to the bulbo-membranous junction, but are well tolerated and effective when applied to the membranous and prostatic regions, where may be used with advantage the method of Guyon by the instillation of 10, 20, or 30 minims of nitrate of silver solution (10, 20, or 30 grains to the ounce), to be in a minute washed into the bladder by a current of water, and repeating the process every three or four days. From Guyon's method good results have been obtained in otherwise intractable cases, particularly those complicated with chronic prostatitis, or gonecystitis.

REFERENCE.—1" New York Med. Journ.," Feb. 15, 1892.

GOITRE.

P. Watson Williams, M.D., Lond.

Many valuable contributions on this subject have been published during the past twelve months, but in the main they only confirm results of methods of treatment which have been already fully described in the last and previous editions of the "Medical Annual."

The treatment of goîtres by injections of **Iodine** has been repeatedly attacked, especially by the advocates of more radical surgical measures. The results obtained by Duguet,[1] who has since 1874 successfully treated many goîtres by interstitial injections of iodine, are well worthy of consideration. He believes that in solid recent goîtres, such as are encountered in young subjects, their disappearance is most readily and rapidly effected under this treatment. Recent cystic goîtres are cured even more readily than the solid tumours. Goîtres which have undergone in places calcareous degeneration or present aneurismal conditions of the vessels give least satisfactory results, though even these undergo decided improvement under injection treatment. The result of this treatment is not the total destruction of the gland, but its progressive atrophy, until it no longer occasions inconvenience by its bulk. Since the gland is not entirely destroyed, the patient cannot be considered beyond the danger of recurrence, and, indeed, in some few cases, this has been noted. The fear of myxœdema, however, need not be entertained.

The injection material employed is the officinal tincture of iodine. Before each injection the goître is carefully measured. The needle, disconnected from the syringe, is thrust into the body of the goître, an effort being made to avoid blood-vessels. After its introduction, the needle is watched for a few seconds to see if any blood flows out. If blood escapes, it is a certain sign that a blood-vessel has been punctured, and the needle should be at once withdrawn and introduced at another point, since very serious symptoms may arise from throwing the iodine directly into the circulation. If the needle enters a cyst, and blood-stained serum exudes, its evacuation may be hastened by means of an aspirating syringe.

When the surgeon has assured himself that the point of the needle is safely placed in the substance of the tumour, the iodine is slowly injected, from 8 to 16 drops being employed at one time. According to the reaction excited, the treatment is repeated every one or two weeks. Before patients are subjected to the iodine injections the urine is examined. If it is found to contain albumin, this method of treatment is not advised.

Probably no amount of care and attention to detail will altogether remove the element of danger from iodine injections. We referred to

the employment of **Iodoform** injections by Kappen in our last edition, a method which has been used by Von Mosetig for the last ten years without mishap. Reverdin[2] has recently advised the internal administration of 3 grains of iodoform daily, and claims as a frequent result marked improvement in from twenty to thirty days. When this treatment has proven unsatisfactory, and when the symptoms are becoming progressively more serious, particularly when the patient is troubled by intermittent or continued respiratory disturbance, surgical intervention is indicated. The choice of operation will lie between extirpation or enucleation, with a distinct preference for the latter method.

Enucleation of the tumour is being extensively practised, but cases which are eminently suitable for enucleation are often complicated by the results of previous treatment. M. Reverdin finds that if the goître previously has been subjected to a large number of punctures and injections of iodine, enucleation is practically impossible ; such cases are, however, comparatively rare. The difficulties of enucleation in such cases are due to the profound alteration of the parts, which prevents the operator from knowing when he has arrived at the capsule of the tumour proper, and to the fact that hæmorrhage is very difficult to control. Reverdin reports fourteen cases of operation on goître. He performed seven partial extirpations and seven enucleations. All but one recovered. Among these there were nine women and five men. The tumours were mostly on the right side. Enucleation required on an average in six cases about twenty-six minutes, and the patient was well in less than seven days.

Partial extirpation required somewhat over an hour, and convalescence lasted about two weeks.

As a conclusion to this paper, Reverdin states that in dealing with goître, the surgeon should give enucleation the preference above all other operative means of treatment.

To enucleate, the thyroid tissue must be laid bare, gradually and slowly incised layer by layer, and at a variable depth from the surface, the tumour proper is exposed to view. According to this author, " So long as you are doubtful, you are not in the growth," which will be immediately recognized by its brownish-gray colour and its smoother surface. The incision must then be enlarged, and now with the aid preferably of the finger, the tumour is rapidly enucleated out of the bed of the thyroid tissue in which it is lying.

Hache[3] had previously detailed a case in which he removed from the neck of a child, aged thirteen, a tumour as large as a goose egg, which, with the exception of a small cyst ruptured in extraction, was of a solid,

homogeneous character, presenting the features of a parenchymatous goitre. The child made a rapid recovery, and six months later no enlargement of the thyroid could be felt. His mode of procedure was the same as that already described, but his concluding remarks are specially noteworthy.

"Its efficacy, its extreme simplicity, and the entire absence of any anxiety as to the occurrence of cachexia strumipriva lead one to employ it without hesitation in place of trying interstitial injections of tincture of iodine—a method that, often uncertain, is always slow in dealing with tumours of such a size."

Exophthalmic Goitre.—Dr. William H. Draper[4], discussing the treatment of Graves's Disease, lays stress upon the fact that such treatment must be very variable and very comprehensive. A treatment designed mainly to control the action of the heart, perhaps the most uniform symptom present, does not cure the disease. Nor does any measure which is devoted especially to the treatment of the thyroid enlargement control the malady. It has to be treated upon general principles: just such general principles as would be applied to the treatment of any general neurotic affection. In his experience physical rest is a point of very great importance. It is not possible to treat these cases with any success without putting them to bed—a point of cardinal importance. Where the physical phenomena are very marked, he thinks it is very desirable they should be treated as one would treat any melancholic patient; that they should be often sent away from home, and protected from surroundings which frequently aggravate the malady, for they are extremely sensitive to every disturbance. Dietetic treatment comes next to the treatment by rest, as patients very often suffer from innutrition and require most careful feeding in connexion with passive exercise by massage and manipulations. A very large degree of disappointment attends the treatment by drugs, but the use of cardiac tonics is often very beneficial. Dr. Draper has derived most satisfaction from the **Digitalis** group of cardiac tonics. In using digitalis he has been in the habit of attempting to get its effect upon the extremely accelerated and irregular action of the heart, and of giving it frequently in pretty large doses. He has used aconite in the form of the tincture and in the form of the active principle, aconitine; but has not had very good success with it. Most beneficial results sometimes follow the employment of **Iodide of Potassium**. Its use heretofore has been based upon its supposed power to diminish the thyroid enlargement. Dr. Draper has seen very excellent results in a considerable number of cases from the iodide without complete cure.

In the "Revue de Thérapeutique Générale et Thérmale" for April 5th, 1892, the following treatment is given: For the purpose of combating the cardiac excitation, which is the principal factor of the paroxysm, the method originally proposed by Trousseau, is to be carried out. Full doses of digitalis-leaves, from ½ to 1 grain, should be given every half-hour for two or three hours, as long as the intensity of the paroxysm lasts. Ice should be applied over the præcordial region in an ice-bag or in a bladder. If, after three hours, there has not been evident great amelioration of the symptoms, recourse may be had to bleeding. Most of the other symptoms have to be treated upon general principles. The treatment which is to be employed during the course of the disease, at other times than those at which the paroxysm is present, differs largely with each authority. Probably the iodides and iodine have been most frequently recommended.

Cheadle is an ardent supporter of tincture of iodine internally, and there is little doubt that this treatment is efficacious in simple goître.

The anæmia which frequently accompanies exophthalmic goître must be met by the administration of ferruginous preparations, and it may be necessary, in order to quiet excitation of the nervous system and the cardio-vascular system, to use bromides in full doses or, in other cases, to employ **Valerian** in the form of the extract, which does much towards quieting the nervous system, the palpitation, and the dyspnœa. All authors are in accord as to the value of digitalis in this affection, probably owing to the favourable influence which it exerts upon the heart through its influence on the pneumogastric. It is particularly useful for the violent tachycardia. Much smaller doses suffice under these circumstances than those which are administered during the paroxysm.

Belladonna is useful in some cases, and Grassett has highly recommended the neutral **Sulphate of Atropine**, in order to avoid the severe suffering which is sometimes present.

Sée recommends very highly, for the purpose of quieting the pulse, tincture of **Veratrum Viride,** in the dose of 10, 12, or 20 drops a day.

Hydrotherapy, for the purpose of improving the general systemic condition, is highly valuable.

The question as to the usefulness of electricity in exophthalmic goître is unsettled. In some cases it seems to be of value, and in others it is useless. Three to eight milliampères is a sufficiently strong current when used from eight to ten minutes.

The *séances* should be extended for at least a month, and after this, treatment should be suspended for about eight days. One pole of the

battery should be applied over the superior cervical sympathetic Other physicians, however, apply faradism over the anterior surface of the chest, particularly in the præcordial region, one pole being placed over the first cervical vertebra. The positive pole should be placed over the heart.

In a case of exophthalmic goître, Dieulafoy[5] gave the following prescription, as there was a distinct tendency to hæmoptysis :—

℞ Powdered Ipecacuanha gr. ½ | Extract of Opium gr. $\frac{1}{10}$
Powdered Digitalis-leaves gr. ½ | M.

Sig.—To be made into one pill. From 4 to 6 of these pills may be given in twenty-four hours.

The effect of this medication is a decided moderation in the symptoms, and general improvement in the condition of the patient. Should diarrhœa follow the administration of ipecacuanha in these constant doses it may be guarded by increased doses of opium.

Möbius[6] in an excellent digest of the recent treatment of Graves's disease, says he has found most benefit from **Bromides.** Electricity may give some relief, generally in the form of galvanism ; but faradism has proved beneficial likewise. Very pronounced good has followed removal of the thyroid. Two cases have been operated upon successfully by Lemke, who considers exophthalmic goître to belong to the surgical wards. The theory of disease of the sympathetic is rejected by Möbius, who regards the proximate cause of the disease as probably a morbidly increased activity of the thyroid gland. This hypothesis is supported by the similarity and points of contrast between exophthalmic goître and other affections due to a diminished activity of the gland (cachexia strumipriva, myxœdema, and cretinism) ; by the fact that exophthalmic goitre not infrequently develops in old cases of goître ; and by the fact that operative treatment of the goître sometimes has a material influence upon the disease.

REFERENCE.—[1] "Journ. de Méd. et de Chir.," tome lxiv. 4 cah., and "Therap. Gaz.," April 15, 1892 ; [2] "Rev. de Chir.," No. 3, 1892, "Therap. Gaz.," May 16th, 1892 ; [3] "Rev. de Chir.," tome xi. No. 9, "Dublin Journ.," June, 1892 ; [4] "New York Med. Rec.," p. 52, July 11, 1891, and "Practitioner," Nov. 1891 ; [5] "Therap. Gaz.," June 15, 1891 ; [6] "Boston Med. and Surg. Journ.," p. 115, February 4, 1892.

Synopsis.—(Vol. 1892, p. 256) For parenchymatous and fibroid goitre, the patient should be removed from the district (if an endemic case); application of blisters and **Fluoric Acid** internally. **Biniodide of Mercury** Ointment has disappointed English observers. Parenchymatous and cystic goîtres have been injected with **Iron** and **Iodine Solutions**; but the use of the latter by Lemon's method has at times proved fatal.

Kapper injects **Iodoform** 1 part, **Ether** 7 parts, **Olive Oil** 7 parts ; [1]

to 25 minims are given by a hypodermic syringe, and repeated either daily or at longer intervals. Auerbach uses aqueous solution of **Osmic Acid** (gr. j. to ʒij) injecting a syringeful every other day. **Partial Extirpation** is the best treatment for parenchymatous goitres and for cystic forms, **Tapping** with or without drainage, or **Enucleation.**

GONORRHŒA.

Synopsis.—(Vol. 1892, p. 258.) **Pyoktanin Solution** 1 to 3000 is of little benefit. Hanika fills the urethra with equal parts of **Tannin, Iodoform** and **Thallin Sulphate** in powder.

Hydrastis, Liq. Ext. 10 to 30 drops to 1 oz. of water, as injection (p. 49). See uses **Silicate of Soda** injections in gonorrhœa (p. 69).

GONORRHŒAL OPHTHALMIA. *William Lang, F.R.C.S.*

The conclusions arrived at by Mr. Holmes Spicer after studying the statistics of two hundred and nine eyes treated at Moorfields or at Thomas Hospitals for gonorrhœal ophthalmia are : The age has a great influence on the gravity of the affection; the younger the subject the greater are the chances of recovery. The more recent the gonorrhœa from which the pus of inoculation is derived, the more intense is the ophthalmia. The length of time before treatment is commenced is the most important point in the prognosis, and the longer the interval the worse the prognosis.

Of all the methods of treatment, **Nitrate of Silver** showed itself to be the most efficient. It must be applied by the surgeon to the everted lids and passed well into the cul-de-sac. A solution of 20 grains to the ounce is necessary in severe cases.

GOUT. *Frank J. Wethered, M.D.*

Berenger-Feraud[1] contributes a short article on a method of treatment suggested to him by Dr. Foucaut, of Orleans, concerning the use of **Lactic Acid** as a prophylactic in attacks of gout. The patient is given 30 grains of lactic acid a day for three weeks or a month, with the result that the attacks are further apart, and are much diminished in intensity. The exact mode in which the drug is given is as follows :—

The patient is provided with ten drachms of lactic acid, to which is added an equal quantity of water. In this manner half a teaspoonful represents thirty grains of the drug. In the morning the patient takes ½ to 1 teaspoonful of the solution with 2, 3, or 4 glasses of water. At the end of two or three weeks the employment of the drug is stopped for ten or eleven days, and then begun again in the same manner. This method is continued during several months or even for years.

Feraud states that he has found lactic acid to be an inoffensive medicament, not interfering in any way with nutrition or the digestive

functions. He believes that it is a valuable remedy, which will be placed high in the list of drugs which possess distinct antilithæmic power.

Drs. Bresenthal and Albert Schmidt[2] recommend the use of **Piperazine** for gouty complaints. They do this on the ground that this substance decomposes uric acid, and they further say that it effects the solution both of vesical calculi, which consist largely or entirely of uric acid, and of gouty concretions. The dose is 5 grains three times a day, in sodawater. It can only be beneficially used for washing out the bladder in a 1·2 per cent. solution.

REFERENCES.—[1] "Bulletin Général de Thérapeutique," Dec. 30, 1891; "Therapeutic Gazette," Mar. 15, 1892; [2] "The Provincial Journal," May 2, 1892.

Synopsis.—(Vol 1892, p. 261.) Smith endeavours to ascertain and use the diet most easily assimilated in each individual case. For plethoric patients, **Saline Purgatives**, *e.g.*, a course of **Sulphate of Soda** will be suitable, and after this **Nitric Acid**, given for a week or two, followed by a persistent course of **Alkalies**, the best forms being the alkaline waters, especially those containing Lithia. In some peculiarly obstinate cases Smith uses **Iodide of Potassium**, and occasionally **Colchicum**.

Vogt gives **Piperazidine**, 15 grs., thrice daily, as a uric acid solvent (p. 64). **Sodium Silicate**, 7½ gr. doses, has been used in gout with some success (p. 69).

GRANULAR LIDS.

William Lang, F.R.C.S.

The importance of this subject is so great that one can excuse the repetition of the same idea in the many articles that have recently appeared thereon. This idea is the expression or squeezing out of the granulations by some mechanical means. The German and French schools adopt the plan of freely scarifying the conjunctiva, and then brushing out the granulations. The American and English schools adopt more generally the squeezing out of the granulations by pressure forceps. Without doubt both these methods have their advantages in certain cases, and it is the judicious selection of the appropriate method in any given case that leads to the comparatively rapid cure, —from a few weeks to a few months—of this once truly formidable disease.

In making this selection, it will be found that where the granulations are near the surface simple expression is enough; whilst in those cases where the granulations are obviously in the deeper layers of the conjunctiva, it will be necessary to cut down on them before proceeding to squeeze or brush them out.

In most cases this can be done under the influence of solid **Cocaine**, which should be dusted over the everted conjunctiva after the use of a

few drops of a 2 per cent. solution. Knapp, of New York, uses a pair of roller forceps, constructed as follows: "The branches of an ordinary, rather strong forceps, divide at their ends like a horseshoe, the free space of which is closed by a creased steel cylinder, which rolls on pivots in sockets. The ends of the forceps thus resemble a stirrup." Personally, I find that the same end is gained by means of a pair of smooth limbed forceps, which were introduced to our notice at Moorfields, by Dr. Graddy, of Nashville, who devised them. They are made by Weiss, and are known as "Graddy's forceps." By their means all superficial granulations are easily squeezed out, and also the deep ones if the conjunctiva over them is previously scarified. The procedure consists in seizing the everted lid between the blades of the forceps, and squeezing and withdrawing them over the attached margin of the tarsus until the whole conjunctiva is free from granulation. The German and French methods of brushing out the granulations necessitate the administration of an anæsthetic. The upper conjunctival sac is now exposed by turning the lid over on itself by means of a pair of clamp forceps, which seize the lid close to its free margin. Numerous incisions are made into the conjunctiva parallel with the free border of the lid, and the exposed and scarified conjunctiva is vigorously brushed by means of a hard tooth brush, which has been dipped into a 1 in 500 sublimate solution. As soon as the granulations appear to be brushed out, the lids are placed in position and cold compresses applied. Next day the conjunctival sacs are cleaned with a weak solution of sublimate, and on the following days the lids are everted as far as possible, and the false membrane removed, and any granulations which may have been left behind cut away with scissors. Darier claims to cure his cases in a few days.

Certainly so much cannot be claimed for simple expression, as it will be found necessary to continue treating the lids for some weeks, though the immediate effect is often very marked, the discharge almost ceasing, the photophobia disappearing, and the whole appearance of the eyes and lids improving.

On the second day after the expression, the everted lids must be brushed over with a 2 or 4 per cent. glycerine solution of sublimate. This will have to be repeated daily, or every second or third day until the inflammation has subsided—the patient meanwhile using a lotion of sublimate of 1 in 500 to 1 in 2,000 two or three times a day.

If the cornea is ulcerated, it will sometimes be found that the sublimate does harm; whilst nitrate of silver is in these cases beneficial.

GRAVES'S DISEASE. (See "Goitre.")

HÆMATURIA.

Synopsis—(Vol. 1892, p. 263) Macwilliam recommends **Salicyl-sulphonic Acid** in saturated watery solution, 1 or 2 drops being added to 20 minims of urine as a delicate albumen test. Patients suffering from hæmaturia are advised to avoid the use of garden rhubarb.

HÆMOPTYSIS. *R. Shingleton Smith, M.D., B.Sc., F.R.C.P.*

The treatment of hæmoptysis by drugs is a subject on which the faith of the profession was much shaken by the Harveian orator of 1890, Dr. Andrew, whose criticisms on the methods commonly in vogue have left us with no trustworthy guide in some of the most critical cases we are ever called upon to conduct. Dr. Vincent D. Harris[1] has presented the subject in an excellent paper, in which he comments on the use and abuse of venesection and emetics in cases of profuse bleeding, when it is necessary to clear the air-passages of blood. He also mentions the utility of **Morphia Injections,** which the writer believes to be by far the most beneficial remedy, inasmuch as the morphia stops the cough, and favours mechanical rest to the bleeding point.

Of the drugs which act by increasing the tendency of the blood to clot at the seat of hæmorrhage, the **Chloride of Calcium,** as suggested by Wright,[2] is worthy of a good trial. It may easily be given in drachm doses of the liquor calcis chloridi every hour, and a small quantity of morphia with each dose has given excellent results in two cases in which it has been recently tried.

REFERENCES.—[1] Harris, St. Bartholomew's Hospital Reports, vol. xxvii., 1891; [2] Wright, "Brit. Med. Jour.," vol. ii., 1891.

Synopsis.—(Vol. 1892, pp. 264 and 375.) Sainsbury states that **Ergot** or **Digitalis** will only check capillary bleeding, and will aggravate hæmorrhage from a large vessel. Andrew advises **Aconite** to reduce blood pressure. Nothnagel uses **Morphine** to quiet cough, and also **Ergotin** and **Acetate of Lead.** Cesari regards **Antipyrin** as a useful local hæmostatic.

HÆMORRHAGE (Internal).

Synopsis—(Vol. 1892, p. 265.) Ferguson uses **Pilocarpine** to lessen fluidity of the blood (not in pulmonary bleeding); also **Epsom Salts,** in full and frequent doses. In stubborn cases he uses the following: Mix 1 oz. each of **Absolute Alcohol** or **Oil of Turpentine** in a glass or Wedge-wood mortar. Add to this very slowly—while constantly stirring—1 oz. of **Sulphuric Acid.** Bottle the mixture after all chemical action has ceased. Dose, 10 to 15 minims, every two, three, or four hours. **Tincture of Hydrastis,** useful in uterine hæmorrhage (p. 50).

HÆMORRHAGE (Post Partum).

Synopsis—(Vol. 1892, p. 264). Misrachi uses **Caffeine** hypodermically dissolved with **Benzoate of Sodium.** A syringeful contains 4 grs. of Caffeine, and 3 or 4 such injections are used at once.

HÆMORRHAGE (Uterine). *Wm. J. Smyly, M.D., F.R.C.P.*

Gottschalk[1] has used the **Hydrochlorate of Hydrastinin** by injection into the gluteal muscles and by the mouth. In the latter instance he considers that it should not be given in larger doses than 0·05 gr. three times in the day, as it may produce unpleasant gastric symptoms. Hydrastinin acts on the vessels by diminishing their calibre, and not on the uterine muscle ; hence ergot is to be preferred if the latter effect be desired. Of course, the cause of the hæmorrhage must in all cases be sought for, and if possible removed. He says that hydrastinin is useful : (1,) In cases of menorrhagia in girls, without gross pathological change ; (2,) In cases where the uterus has been curetted, and where excessive hæmorrhage occurrs at the following menstrual periods ; and (3,) In climacteric menorrhagia. It acts more strictly as a palliative (4,) in cases of menorrhagia in irreducible retroflexion ; (5,) In diseases of the uterine appendages ; and (6,) In cases of endometritis.

The result of some recent experiments by Terdsteff[2] show that hydrastinin given in a small dose provoked, in frogs and in warm-blooded animals, slowing of the heart's movements, owing to a stimulation of the inhibitory apparatus, both peripheral and central. Small doses always increased blood-pressure ; by larger doses it was lowered.

These differences depended upon the state of the vaso-motor centre. Small doses were not followed by convulsions, and did not paralyze either the respiration or the heart. He thinks, then, that if some observers have verified the paralyzing action of hydrastinin upon the vascular system, it must be those who have given larger doses of the remedy. Regarding the influence exercised by hydrastinin upon the uterus, the voluntary or rhythmic contractions of this organ would be increased in their strength, their number, and their duration.

Hydrastinin does not act *directly* upon the neuro-muscular apparatus of the uterus, but *indirectly* by the intervention of the central nervous system, and that very probably by way of the vaso-motors.

In sustaining these obtained results, the experimenter counsels the use of hydrastinin in all those cases of hæmorrhage where it would be, for one cause or another, unwise to await strong contractions of the uterine muscles, and where it is of the greatest importance to attack the bleeding through the vessels of the uterus.

Abel,[3] while extolling the value of hydrastinin, especially when it is administered subcutaneously, considers that it must be given for a considerable period, as its action is slow. On that account it should not be employed for any acute forms of hæmorrhage. In the acute

hæmorrhages associated with fibroids, hydrastinin is of little benefit; but in cases of metritis and endometritis it is of the greatest service. He cured five bleeding cases where the curette had been freely applied without any result. Hydrastinin is also very valuable in pure menorrhagia with no evidence of uterine or ovarian disease. A 10 per cent. solution of the hydrochlorate of hydrastinin was employed, injecting from ½ to 1 gramme under the skin over the right or left iliac fossa. The injection sometimes caused irritation and discoloration of the surrounding integument. The number of doses depends upon circumstances. In chronic cases of metritis, 1 gramme injected once a week may prove sufficient. When there is menorrhagia, 1 gramme should be injected daily during the period.

Bossi,[4] in a paper read before the Medical Academy of Genoa, July 1st, 1891, reaches the following conclusions as the result of numerous trials in the obstetric clinic :—

(1,) Fluid extract of hydrastis canadensis, in doses of 100 or 200 drops a day, exercises no injurious influence upon either the mother or the child at any period of pregnancy. The same is true during the puerperium.

(2,) When used during pregnancy, labour, or the puerperium, hydrastis shows a constant hæmostatic and prophylactic effect upon the uterus, without in any way exerting an ecbolic or disquieting influence.

(3,) It acts more powerfully than ergot, and is free from the after-effects of the latter, so that it can be used without fear as a curative and prophylactic remedy in metrorrhagias occurring at any period of pregnancy, labour, or the puerperium. It may, therefore, be intrusted to midwives in the country in preference to ergot.

Hydrastis is indicated : (1,) In losses of blood occurring in pregnancy and in the puerperium, the general dose being from 100 to 150 drops a day ; (2,) As a remedy administered after the child is born, in doses of 150 to 200 drops daily, 50 to 60 drops being given at a dose ; (3,) And in the preliminary stage of labour in cases of placenta prævia ; (4,) It is also indicated in the period of dilatation ; and (5,) As a prophylactic remedy against post-partum hæmorrhages, uterine weakness, great development of the fœtus and of the adnexa, anæmia of children, and in those cases in which there is disposition to hæmorrhages.

In two cases of profuse metrorrhagia A. N. Dimitrieff[5] has obtained good results by the subcutaneous injection of **Atropine** in doses of 0·0003 gramme. In the first case the hæmorrhage stopped after four injections ; in the second, after three. Atropine is sometimes of service

when other hæmostatics have failed. Dr. Dimitrieff is unable to explain the action of atropine, but it is certain it affects the blood pressure; but whether by acting on the vaso-motor nerves, or on the vessels themselves, or on the vaso-motor centre, is, he considers, doubtful.

A Meisels, after satisfying himself as to the truth of Kobert's assertions, that ergotinic and sclerotinic acids possess vaso-dilator properties, and that sphacelinic acid and cornutin cause contraction of muscular tissue, has treated urethral, vesical, and uterine hæmorrhage with pure **Cornutin**; 0·01 gramme was given daily in divided doses. The results were very satisfactory.

Dr. Velits,[6] of Buda-Pesth, reports thirteen cases which he treated by means of **Iodoform-gauze Tampons** during labour (twice in the puerperium) to control hæmorrhage, and draws the following conclusions:—

(1,) Iodoform-gauze may be considered as thoroughly aseptic for obstetrical purposes.

(2,) In atonic hæmorrhages the iodoform-gauze tampons act as irritants, and produce permanent contraction of the uterus. To obtain this result, only a small quantity should be introduced into the uterus, so as not to interfere with retraction.

(3,) In hæmorrhages due to the state of the blood itself, the iodoform-gauze is worthless; in fact it is injurious, for it tends to keep up the hæmorrhage. In these cases we can obtain excellent results by employing weak solutions of chloride of iron.

(4,) When the hæmorrhage is due to a high cervical tear, the only safe method of treatment is the suture.

(5,) Hæmorrhages which occur in the latter part of the puerperium, or directly after labour, and are associated with myomata, can only be controlled by packing the uterine cavity firmly and completely with iodoform-gauze tampons.

In the Rotunda Hospital we have tried this treatment with good results (Rep.).

REFERENCES.—[1] "Therap. Monatsh.," May, 1892; [2] "Therap. Gaz.," Oct. 15, 1891; "Archives of Gynæcology," Aug., 1891; [3] "Brit. Med. Jour.," April 23, 1892; "Berl. klin. Woch.," Jan. 18, 1892; [4] "Therap. Gaz.," Jan. 15, 1892; "Zeitschrift für Therapie," Oct. 1, 1891; [5] "Lancet," April 2, 1892; [6] "Orvosi Hetilap," No. 10-12, 1890; "American Jour. of Obstetrics," Sept., 1891.

HÆMORRHOIDS

Frank J. Wethered, M.D.

In an exhaustive paper on the treatment of piles and allied affections read before the Medical Society of London, Dr. Lauder Brunton

brought forward some methods of treatment which he had found practically useful, and which in their details he considered were not as widely known as they deserve. Having reviewed the conditions which tend to bring on piles, Dr. Lauder Brunton remarked that as to treatment exercise is useful in keeping the liver free ; especially brisk horse exercise, which induces a rhythmical squeezing of this normally very spongy organ. Another useful exercise is to touch the toes with the fingers, keeping the knees straight, several times every morning. Of the utmost importance in preventing piles is a regular action of the bowels, because it not only tends to keep the circulation through the liver free, but prevents straining. No doubt the best time ordinarily for emptying the bowels is after breakfast ; but if the piles tend to come down much, it is better for the patient to get into the way of emptying the bowels every night before going to bed. If the piles become troublesome, it is always well for the patient to wash the anus immediately after a motion. For this purpose he ought to carry with him to the closet a soft sponge in a small indiarubber bag—an ordinary tobacco pouch is best. The patient should also take with him some preparation of **Hamamelis** and some prepared wool—sheep's wool deprived of its fat, not cotton wool—as the former will readily take up the hamamelis and moreover will form a kind of felt, which the cotton wool does not. A small pledget of the wool dipped in the hamamelis should be introduced within the anus, and a similar pledget, likewise soaked, should be introduced so far within the anus that a few fibres of it at least are caught by the sphincter. The external pledget soon becomes felted together into a regular pad, fitting completely to the anus ; and being retained by the few fibres caught by the sphincter it will remain there for twenty hours, while a similar pad of cotton wool might not remain as many minutes. This wool pad not only keeps the hamamelis in constant contact with the piles, but also affords a certain amount of mechanical support. Where the piles are chiefly internal, the hamamelis may be applied in the dose of ½ drachm to 1 drachm, either diluted with water or (as is sometimes preferable) undiluted, by injecting it within the anus by means of a glycerine syringe. The success of this treatment in stopping hæmorrhage from the piles is really extraordinary ; within a week bleeding will cease which may have been so profuse as to suggest operation. But not only does the hamamelis stop hæmorrhage, it lessens the uncomfortable weight and pain which so frequently accompany piles, especially when they do not bleed ; and it will even greatly lessen or remove the pain which occurs in piles when they become inflamed. After trying various preparations of

hamamelis, Dr. Brunton has not found either the tincture or the liquid extract, both of which are among the recent additions to the Pharmacopœia, nearly so satisfactory as some of the proprietary preparations. Pruritus and eczema round the anus, which frequently go along with piles, may be lessened by applying **Eau de Cologne** to the itching surface with a small sponge or a pad of cotton wool.

REFERENCE.—"Lancet," March 12, 1892, and "Practitioner," May, 1892.

HÆMORRHOIDS (Surgical Treatment of). *F. S. Eve, F.R.C.S.*

"In the large majority of cases suffering from piles, there is distinct spasm of the sphincter, excited originally by the blood stasis, but reacting upon the original lesion in such a way that the congestion is greatly increased. Such sphincterismus can readily be excited by even comparatively slight causes, such as fissure, varicosity, or acute hyperæmia of the mucous membrane. The contraction of muscles thus excited by its effect on the circulation seems ultimately to bring about a true hæmorrhoidal condition."

The sphincterismus is coincident in its development with the appearance of the hæmorrhoids; hence Verneuil[1] concluded that the most efficient way of dealing with piles was to overcome the muscular contraction, which was such a potent means of keeping up local congestion. This muscular spasm he overcame by **Stretching** (taking pains not to rupture) the muscular fibres. He performed his dilatation very slowly, employing the fingers. At first one was inserted, then two, then three, and finally four. The four fingers, held closely together, were gradually pressed in more and more deeply until the proper amount of overstretching was reached.

An important point in making the dilatation is to perform it slowly, so that the muscular fibres and mucous membrane are stretched and not ruptured. This operation is followed by comparatively little pain, the patient experiencing only a certain sense of weight and soreness. It requires no dressing beyond the application of an iodoform suppository, the dusting of dry iodoform, and the application of some absorbent cotton, held in place by a bandage. Incontinence of fæces will probably result for a few days.

Mercier[2] states that this method of treatment will be found efficacious in nearly all cases of hæmorrhoids, excepting when the latter are very large, and when the anal orifice is relaxed, infundibuliform, without tonicity, and there is prolapse of the mucous membrane. Even in these cases, he states that, though dilatation cannot cure this condition, it will lessen the violence of the symptoms, and produce temporary alleviation of the suffering.

REFERENCES.—[1] "Brit. Med. Journ.," Jan. 16, 1892; [2] "L'Union Méd. du Canada," 1892.

Synopsis.—(Vol. 1892, p. 266.) **Ligature with Incision** is the safest operation in old and feeble patients, and for large vascular piles. **Crushing** is not so safe for bad cases, but is less painful, and recovery is usually more rapid. **Simple Cutting Away** is sufficient for one or two piles. Use of **Clamp and Cautery** is strongly deprecated, but the **Cautery** alone may be used for capillary piles.

HÆMOSTATICS.

Synopsis.—(Vol. 1892, p. 268.) Cesari commends **Antipyrin** in 40 or 50 % solution locally, or the powdered drug may be used, either being applied on plugs of cotton wool.

HAY-ASTHMA. *P. Watson Williams, M.D., Lond.*

A very favourable result was obtained by Dr. Blair with **Euphorbia Pilulifera,** a plant indigenous to Australia and the West Indies, where it is regarded as an excellent remedy for coughs, colds, and, in fact, all affections of the respiratory tract. He records the case of a child, aged ten years, of rather delicate constitution, who had suffered for about five years with regularly-recurring attacks of hay-fever. The day would be passed with comparatively little suffering, but each night the asthmatic attacks would recur. The benefit obtained from euphorbia was prompt and decided. After taking the prescribed dose three times a day for a few days, the patient was allowed to omit it, and would go for days or a week without the symptoms returning. Upon showing themselves again, a return to the medicine had the same happy effect as before.

The usual dose is 30 drops in water or glycerine every four hours for several days. (See "Annual," 1892, p. 40.)

REFERENCE.—"Ther. Gaz.," March 15, 1892.

HEADACHE. *Graeme M. Hammond, M.D., New York.*

Moritz[1] has drawn attention to certain forms of unilateral pain in the head occurring paroxysmally, often with a history of gastric origin, following the ingestion of indigestible substances and associated with other dyspeptic symptoms. During the paroxysm an examination of the contents of the stomach showed an absence of free hydrochloric acid. The administration of diluted **Muriatic Acid** afforded marked relief.

In a great many cases of headache a careful investigation will show that the patient is suffering from the retention of fæcal matter in the large intestine, and that though there may be a daily movement of the bowels, the stool is ragged and foul smelling. The administration of a large enema, or, better still, a **Colo-clyster,** will almost invariably bring away a large amount of fæcal matter which has

been retained, notwithstanding the patient may have had daily evacuations. These retained fæcal masses contain a great number of microbes, which, under favourable conditions for growth, develop poisonous ptomaines which play a most important *rôle* in the production of a great variety of symptoms hitherto little understood. The patient should be placed in the knee-chest position, and two quarts of warm water should be injected. The bowels should then be manipulated, so as to cause the water to pass as far up the colon as possible. Sometimes two or three such injections may be necessary before the fæcal matter entirely comes away. The injections can advantageously be given once or twice a week.

REFERENCE.—[1] "Practitioner," Feb., 1892; [2] "Bacterial World," Dec., 1891.

HEART (Diseases of). *Frank W. Jackson, M.D., New York.*

Malignant endocarditis, or infectious endocarditis as it is now quite commonly termed, has been the subject of considerable discussion of late. Fraentzel[1] in the continuation of his lectures upon "Diseases of the Heart," presents some interesting observations upon this subject.

After stating the well known points in the pathology of malignant endocarditis, he says in addition: "I must state explicitly that in the malignant form of endocarditis the valves of the right heart, and especially those of the pulmonary artery, are not so uncommonly affected as in the other cases of endocarditis. Also in the ventricular portions of the endocardium this form of endocarditis is comparatively more frequent. Naturally the diagnosis in these cases is especially difficult."

He divides the disease into acute, sub-acute, and chronic forms.

He does not believe that the diagnosis of malignant endocarditis is as difficult as it is considered by some authors. The severe general illness, the erratic chills, and the unmistakeable pyæmic symptoms, which appear in the course of this disease will, in most cases, lead with certainty to the correct diagnosis. Only exceptionally shall we see a patient die without a definite diagnosis having been formed. The greatest difficulty will lie in forming a differential diagnosis from typhoid fever, and from acute miliary tuberculosis. Here the examination of the fundus oculi, and the demonstration of extensive hæmorrhage in the retina will guide us very naturally, if not with absolute certainty. As regards etiology, we must remember that the disease most frequently attacks persons between the ages of twenty and forty years, although children are not entirely exempt. Women have the disease more frequently than men, though this proportion is founded

upon the fact that this endocarditis is often a complication of the septic form of puerperal fever.

The prognosis of the acute form of malignant endocarditis is very grave, almost every case is certain to have a fatal result; that of the subacute and chronic cases is better, but on the whole the prognosis is extremely unfavourable. As a rule, death occurs in the first fourteen days of the disease; very rarely does a patient live longer.

Fraentzel, in one case, saw the acute form pass into the sub-acute. The fever almost entirely disappeared, but the frequent erratic chills with the following sudden collapse proved the continuing violence of the disease. Death occurred six weeks from the beginning of the disease, as a result of gangrenous deposits in the lungs and pulmonary œdema. In one other case, in which acute malignant endocarditis had been established, the improvement could be traced until the condition of the chronic disease was reached. The patient's brain was clear; the attacks of chill came more and more rarely—between the last two chills there was an interval of four weeks—and there seemed to be ground for hope that a partial recovery might take place, when the symptoms of insufficiency of the aortic valve appeared, and the patient died suddenly from syncope after an illness of seven months. At the autopsy no especial cause for this sudden termination could be demonstrated.

In the chronic form of malignant endocarditis the course of the disease may be prolonged for months, and during all this time it may be doubtful whether the patient will recover or not. The cases of other serious diseases complicated by malignant endocarditis in which cures are possible are not so rare as many physicians suppose. Fraentzel has successfully treated twelve women with severe uterine phlebitis, and among these, four of them had malignant endocarditis. Two of these still live with valvular lesions, which cause comparatively little annoyance. One of these he has treated for twenty-two years, the other for eleven. The other two cases were hospital ones, and have not been seen since they were discharged from the hospital. Fraentzel also calls attention to the fact that it is not a very unusual event for patients who suffer from "surgical pyæmia" with coincident malignant endocarditis to escape a fatal issue. On the other hand, he knows of no case, where a septic thrombosis of the petrosal sinus, or a pylephlebitis was complicated by malignant endocarditis, which did not end in death. He has seen two cases of uncomplicated primary malignant endocarditis in which the chills gradually ceased, and finally a simple valvular lesion remained. One of these patients, after developing aortic insufficiency, finally died of secondary œdema

following erysipelas of the thigh, three years after Fraentzel had treated him for malignant endocarditis. The other patient passed from observation.

In regard to the treatment of this disease, Fraentzel believes that the only efficient agents are large doses of **Quinine**, and large doses of **Alcohol**, together with judicious nourishment. Quinine should be given in doses of from 7½ to 15 grains, in capsules, two or three times daily. Larger doses he does not recommend, because of the disagreeable nervous disturbances, which are very troublesome to the patient, and because no especial success has been noticed when larger doses have been administered. Smaller doses have absolutely no effect.

Dr. Geo. B. Shattuck[2] reports a rare and interesting case of malignant endocarditis following typhoid fever.

A case of experimental infectious endocarditis is reported by Josserand and Roux[3]. A rabbit was inoculated in the auricular vein with a culture of staphylococci, which had been made from a drop of blood taken from a finger of a patient suffering from this disease. The rabbit died a month later, and examination showed a bloody effusion in the pericardium and peritoneum, and an endocarditis of remarkable intensity. The leaflets of the aortic valve were swollen and covered with small vegetations. The mitral orifice was almost obliterated by vegetations arising from the mitral valve. The patient died twenty-four days after the autopsy of the rabbit, and her heart showed a precisely similar condition. In view of the difficulty of establishing the diagnosis of infective endocarditis, in many cases the authors strongly urge the value of inoculation experiments by which, they believe, a positive diagnosis can be made during the life of the patient.

Oulmont and Barbier[4] report a case of infectious endocarditis which developed in a previously healthy, non-rheumatic woman, aged thirty-four, as she was recovering from an attack of *la grippe*. Death occurred in one month, and the autopsy showed extensive vegetations and ulcerations of the mitral valve. During life, cultures were made from the blood taken from the arm, and these showed the presence of micrococci and streptococci. Preparations made from the mitral valve, and other portions of the body after death showed also masses of the same micro-organisms. Huchard[5] has also observed three cases of infective endocarditis due to *la grippe*. In these three cases old aortic lesions rapidly developed into an infectious condition, and death followed in several weeks.

Rupture of Tendons of Mitral Valve.—An interesting case of

rupture of the tendons of the mitral valve is reported by Potain[r], who points out that this accident is quite rare, and can only be suspected when valvular incompetence develops immediately after a severe strain. The rupture is often accompanied by severe pain, pulmonary congestion, cyanosis, and sometimes by speedy death. The aortic valve is the most easily ruptured; the mitral valve much less easily. Rupture of the tricuspid valve is most rare, and has only been observed in three cases. Usually only one or two tendons rupture, but sometimes the whole valve gives way. In some cases the papillary muscles themselves, and even the columnæ carneæ, are ruptured. The rupture may be the result of traumatism or sudden exertion, or it may occur spontaneously, without the slightest effort or shock. The tendons are usually found to have been previously diseased. Potain believes the rupture during exertion to be caused by the increased pressure in the aorta, which is brought about by the sudden and simultaneous contraction of all the muscles of the body.

Mitral Stenosis.—The statement that the murmur of mitral stenosis may occur without endocarditis of the mitral valve, is further supported by observations of V. de Risi[s], who has observed in the cases of chlorotic and readily excitable girls a distinct presystolic murmur, which, in a case demonstrated by Prof. Senice, showed few interruptions. The Reporter has also frequently observed a non-permanent presystolic murmur in anæmic girls. Such a murmur may be heard at the apex of the heart or, sometimes, only in the third or fourth intercostal space to the left of the sternum. V. de Risi, however, believes, as the result of an elaborate theoretical study, that the presystolic murmur can only be of mechanical origin, arising from an inorganic functional defect of the auriculo-ventricular orifice, namely, from functional stenosis. For the anatomical basis of this condition, he quotes Paladino's anatomical description of the muscular fibres extending from the auricle to the ventricle. He further tries to prove that the systolic heart murmurs, which arises in anæmia, are the result of malnutrition of the heart muscle, and that they must arise directly from the disease of the muscular bands which extend from the ventricle to the valves. The disease of these bands causes an irregularity in the closure of the valves in consequence of abnormal contraction of the heart muscle. Such theories are very interesting, but it need scarcely be pointed out that theories are not always facts.

Senile Heart.—We alluded to Balfour's[t] views in our last issue; his directions respecting diet and exercise are of so much value that we extract them for reference.

Exercise.—The need of exercise, and the capacity for taking it with

safety and advantage are often points to be very carefully considered. A patient with a weak, irregular heart, often comes back from a walk of a mile or two with a heart perfectly regular, and pulsating with greater force and vigour. The exercise not only benefits the heart at the time, but, by promoting the circulation through its walls, it nourishes the muscle and accumulates energy within the ganglia. This, however, can only happen when the organism itself is not enfeebled, and when the heart retains recuperative power, and is rather oppressed than actually debilitated.

Dietetics.—Cases of senile heart may be grouped, for dietetic purposes, under two distinct heads. First, those patients who are over their normal weight, who are breathless with occasional irregularity of the heart, and with or without marked signs of cardiac dilatation. Secondly, those who are at, or below their normal weight, and who suffer very considerably from cardiac disturbances of various characters, and with or without very evident signs of dilatation of the heart. The first set of cases are usually dubbed cases of fatty heart, and are probably told to expect sudden death. The second set are grouped under the ordinary heading of cardiac disease, and treated accordingly. Fatty heart is a comparative rarity, and its diagnosis is perfectly impossible. Hearts set down as fatty are weak, dilated or dilatable, and some of them are oppressed with fat, though not themselves in any respect fattily degenerated. To send such cases to Marienbad is a practice not without danger: the treatment often precipitates the very dilatation of the heart which it is our object to ward off. The danger of this treatment is now distinctly recognized by some of the ablest of modern German physicians. Fortunately we can easily and comfortably relieve such patients of their burden without taking them from their own firesides. The first point of importance is to divide the day properly, so that there may be a sufficient interval between each meal. In health the stomach empties itself three or four hours after a meal, and requires a rest before new food is ingested. In those having weak hearts and feeble circulations the digestion is bound to be somewhat slower. Hence the first rule to lay down is: *not less than five hours between each meal.* The next point to remember is, that the ingestion of solid food into a stomach still digesting a former meal arrests that process and provokes flatulence. Hence the second rule is: *no solid food of any kind between meals.* This rule must be absolute; not even a morsel of cake, or biscuit, or any similar trifle, is to be ingested between meals. The third rule is: *all invalids should have their most important meal in the middle of the day.* They should only have a light meal in the

evening. All those with weak hearts have feeble digestions, the gastric juice being deficient in quantity and poor in quality. It is needful, therefore, to restrict the quantity of their food, and to see that it is not diluted with too much water.

Balfour objects to alcohol in its various forms, in spite of the fact that it is often recommended as an aid to a weak heart and to a feeble digestion. When alcohol is continued for any length of time, he believes it adds to the feebleness of the weak heart, and lessens the power of a decayed digestion.

Prognosis of Valvular Disease.—Fraentzel discusses the subject in his usual thorough manner, and it is to be regretted that space does not permit of more than a brief abstract of the subject. Two questions present themselves: first, whether valvular lesions in general may be entirely cured? second, what is the prognosis of valvular lesions that do not heal?

The answer to the first question is that, from the reports of many writers, there can be no doubt that valvular lesions of the heart may be cured, and that the majority of cures are cases of mitral insufficiency. By cures, we mean not only the disappearance of the murmur, but also the lasting disappearance of all cardiac symptoms. The cardinal point is, however, the lasting disappearance of the murmur. It must be remembered that the spontaneous cures of cardiac valvular lesions are so rare that, in prognosis, they must be regarded only as exceptional cases.

In regard to the answer to the second question, the degree of compensation has a most important bearing. Where compensation is very complete, the patient may live for many years without symptoms referable to the heart. This fact is of the greatest practical value. It follows that we need not treat every patient as if he were a candidate for death, but that we should preserve his unconsciousness as long as possible. But a patient with heart disease certainly should not live such an unrestricted life as would a healthy person, and must know enough of his disease to enable him to avoid those conditions which would tend to render his state of life worse. He should especially avoid bodily over-exertion, and also the excessive use of tobacco, alcohol and coffee. Now and then we see patients who defy all these rules, and yet live for a long time without serious annoyance from the heart; but such cases are exceptions.

The question of marriage demands special consideration, for this happiness should not be sought by a person with heart disease without hesitation. Men with heart disease may, through sexual enjoyment, incur considerable injury, which, even where there is perfect

compensation, may produce irreparable disturbances of compensation. The first point to be considered is whether a betrothal already exists. If so, then the breaking off of this may involve greater nervous excitement and strain than marriage itself. If there is no betrothal, then, before marriage is sought, the patient must be warned. Women with heart disease, very often, though certainly not always, suffer during pregnancy from disturbances of compensation with œdema. The majority of these patients recover after confinement; the latter goes on well, and compensation is re-established. But some of such patients incur incurable disturbances, of which they die.

As regards the liability to sudden death, we may say, in general, that when sudden death occurs in valvular lesions, it is usually in cases of disease of the aortic valves, and especially of aortic insufficiency. We next have to take into consideration that certain cardiac lesions grow rapidly worse and speedily bring about a fatal end, while a third class of valvular lesions may continue for a long time in a state of complete compensation. So we must endeavour to determine whether in a given case we may hope for a long continuance of compensation, or must expect a sudden turn for the worse. For the determination of this question, we must first consider what valves are diseased, and what is the form of the disease, whether insufficiency or stenosis. Among all the valvular diseases, mitral stenosis affords the best prognosis—that is, the best guarantee for the long continuance of compensation. Insufficiency of the aortic valves, in which the chance of sudden death must be considered, gives on an average the worst prognosis. There are of course many exceptions to these statements. The different causes of disease which produce insufficiency of the aortic valves, make, as a rule, no material difference in the prognosis.

The intensity of a murmur is no measure of the danger of a valvular lesion.

It is of especial importance in prognosis to determine the degree of dilatation of the ventricle. The greater the dilatation, the greater the danger to the patient; the greater the hypertrophy, so much the better for the patient.

It is also of great importance in prognosis to determine whether the endocarditis, which causes this valvular lesion, is stationary or progressive. As a rule, congenital cardiac lesions are absolutely stationary—the process has run its course, does not relapse, and the well-established compensation will not be disturbed without some especial interference. There are, however, exceptions to this rule. Arteriosclerosis produces valvular lesions, which are progressive, and therefore unfavourable. Valvular lesions produced by over-strain are also

frequently progressive. Our therapeutic treatment is of especial importance in the state of disturbance of compensation. On account of symptoms then presenting themselves, it is wise, as Leyden has justly remarked, to distinguish several phases of compensation.

In the first phase of slight compensation, which results in the patient being no longer as capable as a healthy man- in his suffering from slight dyspnœa, palpitation, slight stasis in the lungs and slight attacks of hæmoptysis, he can, with some limitations, lead the life of one in health.

The second, and more serious phase, is characterized by the appearance of dropsical symptoms. This demands a careful prognosis, though not necessarily an unfavourable one. This condition, with some fluctuations, may go on for a long time.

The third phase, in which the prognosis is absolutely bad, shows itself by highly-developed œdema, which will not yield to treatment, and by serious dyspnœa, and the patient finally dies from the complicating congestion of the liver and the lungs. But death can be averted for some time by energetic therapeutic treatment.

A question of great practical value is, whether the present disturbance of compensation, or the aggravation of some earlier disturbance, has commenced gradually without special cause, or whether it has been caused by some factor which may be attacked and overcome. In cases of cardiac disease, we quite often see a material aggravation of its condition brought about by bronchitis, pleurisy, pneumonia, etc. If we succeed in overcoming this danger, the old favourable condition may again be obtained.

Finally, the prognosis depends upon the efficacy of medicaments. We must remember that a large number of cardiac diseases, and especially valvular diseases, are better off for a long time without medication, and that it must be regarded as a grave medical blunder, when such patients are in a state of complete compensation of the valvular lesion, to give them medicine. A carefully considered dietetic treatment is sufficient.

THERAPEUTICS.—Liebermeister[9] has contributed a valuable article upon the therapeutics of valvular lesions of the heart. The treatment of these lesions, he says, includes the treatment of the endocarditis, from which they have arisen. Most valvular lesions are incurable. Only in relative and functional insufficiency is a complete cure possible. In these conditions treatment consists essentially in avoiding the causal conditions, especially anæmia and chlorosis, and in improvement of the condition of the whole body, and of the heart muscle in particular. Although the resulting valvular lesions are incurable, their

treatment is important, as it prolongs life and enables the patient to enjoy a relatively good and useful existence.

The first effort should be to restore compensation as completely as possible; then to take care that this compensation is maintained; and finally, if this compensation becomes disturbed, the effort should be to obviate its bad consequences.

He does not approve of heart gymnastics, especially such exercises as demand active movements of the body, as jumping, mountain climbing, or the like; for the reason that hypertrophy, so far as it is necessary to restore compensation, arises without our efforts, and just in proportion to the obstruction in the circulation. More than this does harm, because the more decided the hypertrophy, the sooner degeneration occurs. In stenosis, until hypertrophy of the heart has taken place, all great demands upon the heart should be carefully avoided. The patient should be kept in bed till hypertrophy takes place. Then the patient may be permitted, as an experiment, to leave his bed, and the length of time he is permitted to remain up gradually increased. Light passive gymnastics may then be tried, and subsequently he may be allowed to take a few short steps on the level. Gradually he may perhaps come to take longer walks, and even moderate ascents may be made, but so carefully that the patient is not wearied.

If the patient makes it an inflexible rule to stop and rest as soon as palpitation and shortness of breath appear, there will be no danger of his surpassing the limits of safety in his exertions. If his subjective sensations cannot be used as a guide, let him remember that the limit is reached when his pulse rises to 90 or 100 beats per minute.

It is of special importance for the restoration and maintenance of compensation that the heart muscle should be as well nourished as possible. A mixed diet, with some preponderance of proteids, is best. For many cases a liberal supply of milk, besides food not too rich in fats and carbo-hydrates, is advisable. The idea that heart patients should have as small a quantity of fluids as possible is a mistaken one. Alcoholic beverages are to be forbidden entirely, or to be permitted very sparingly. Coffee and tea are only allowable when taken weak and diluted with two or three times their volume of milk. **Iron** and **Quinine** may in some cases contribute to the nutrition of the patient.

In summer, an elevation of fifteen hundred to three thousand feet and forest air are to be recommended, while in winter a climate which permits the patient to be frequently in the open air is best. In patients with excited, or excitable hearts, tepid baths (88° to 90° F.), not lasting too long, do good. Baths holding salts, and especially the

thermal salt-water baths of Mannheim, which are rich in carbonic acid, have proved useful.

If disturbance of compensation has occurred, swelling of the liver, lessening of the secretion of urine, dropsy, cyanosis and dyspnœa appear, the outlook for the future is less favourable. But we are able in many cases to restore compensation and to maintain a moderate working condition for a long time. This is attainable more frequently in mitral lesions, and especially mitral insufficiency, than in aortic lesions. The most important measure in every disturbance of compensation consists in reducing the demands upon the heart to the smallest degree possible. Patients must lie in bed for a long time; this alone will frequently achieve the desired object. Gradually, compensation is restored; the patient can again be permitted to get out of bed, and subsequently, after suitable caution regarding any occupation bringing a strain upon the heart, go about his business.

In the Medical Clinic at Tübingen, two hundred and ninety-one cases of valvular lesions of the heart were treated in the twenty years from 1870 to 1890; in two hundred and thirty of the cases there was disturbance of compensation. In one hundred and thirty of the latter, an expectant treatment of rest in bed, and a suitable diet without drugs, was tried. In eighty of the latter cases this treatment sufficed to restore compensation completely, and for a long time. In twenty-three of the cases the result was only transient, and in twenty-seven cases drugs had to be resorted to, because expectant treatment alone did not succeed.

Drugs are to be used when rest in bed does not suffice to restore compensation, and also in all cases in which the disturbance is so grave that any delay might be dangerous. **Digitalis** is the principal heart remedy, but it must be remembered that its effect is only transient; under favourable circumstances it may last three or four weeks, or even longer; under unfavourable conditions it may pass away in one or two weeks. The digitalis is to be stopped as soon as the secretion of urine exceeds two or three quarts, or if the frequency of the pulse is considerably lowered, or if any disagreeable sensations from the digitalis is experienced. It should not be given again too soon, as a full digitalis effect can only be counted on after four weeks have elapsed since the last employment of it. Liebermeister says that he never prescribes digitalis unless he is certain that the patient will remain in bed until full action of the drug is obtained.

Digitalis fails sometimes because the valve lesion has advanced to such a degree that for mechanical reasons a restoration to an approximately normal circulation is impossible, and sometimes because degeneration of the heart muscle has advanced too far.

When digitalis fails, other remedies may, in individual cases, remove dropsy and improve compensation. Some of these act similarly to digitalis, and others excite the kidneys to greater secretion. In the former class we find **Strophanthus** and **Convallaria.** In the latter class **Calomel** is to be mentioned before all others; in doses of 3 to 4½ grains two or three times daily it is an excellent diuretic. **Caffeine** acts both upon the heart and upon the kidneys. We also remember the diuretic properties of **Squills,** the **Alkaline Salts,** etc.

Hydragogue remedies are uncertain. In some cases **Diaphoresis** is successful. In a few cases we are able by lessening the quantity of fluids ingested to diminish the dropsy. **Tapping** may be necessary to evacuate dropsical effusions.

In special cases, other measures are helpful. It is often useful in patients with very excited heart-action to employ **Cold Applications,** or an ice bag, to the præcordia, but only for a short time. It is also possible at times to quiet the heart's action by lukewarm baths. In a failing heart stimulants may be demanded, and of these are **Alcohol, Camphor, Strong Coffee,** with **Rum** or **Cognac,** and hypodermic injections of **Camphorated Oil** or **Ether.**

In very severe disturbance of circulation and of compensation, if all other means fail, free **Blood Letting** has often a very favourable effect. This measure Leibermeister believes is employed too seldom. When degeneration of the myocardium coexists with valvular lesions, **Nitro-glycerine** may be valuable.

The strange doubt as to the advisability of the use of digitalis in cases of aortic regurgitation has shown itself again in the shape of many articles upon the subject published during the past year.

Balfour[10] shows admirably how erroneous is the idea that it should not be employed. He demonstrates that a slow pulse not only gives fewer opportunities for regurgitation, but though it is indubitably accompanied by a prolonged diastole, the regurgitation is not thereby increased, the reflux is actually diminished by a slowing of the heart's action, and the balance of the circulation made more equable. The action of digitalis, therefore, in slowing the heart is not hurtful in aortic regurgitation, but beneficial. Apart from its action in slowing the heart, digitalis possesses the property of increasing the elasticity of the muscular tissue, so that this extends and contracts more completely and perfectly, and as the blood passes more frequently through the heart than through any other muscle, this action is especially exerted upon it, and is manifested at a time when the other muscles are practically uninfluenced. The importance of such an action upon a failing heart cannot be over-estimated. In all cases of ruptured

compensation in mitral incompetence, we are accustomed to rely upon it with the utmost confidence, and are rarely disappointed. Why should we have misgivings in aortic incompetency? In the early stages of this disease the heart is well fed, every part of it is flushed with blood which, from the increased size of the blood-wave and the position of the coronary arteries must be, at first at all events, at an abnormally high pressure, the nutrition of the heart is specially well provided for, there are no symptoms, and no treatment is required. When from any cause, however, the compensation fails, the aortic lesion will be found as amenable to the beneficial influence of digitalis as any other, only larger doses are required; three times as much as in mitral disease is often used to get the effect desired. Even should the pulse become abnormally slow, which is not at all usual, and certainly not needful to secure benefit, we may rest assured that excessive regurgitation is not then promoted, and, though sudden death is not at all unlikely to happen in badly compensated aortic disease, whether it is treated with digitalis or not, the drug is never to blame for this. On the contrary, the judicious use of digitalis is the most efficacious treatment in all cases of failing heart, whether that failure be accompanied by aortic or mitral regurgitation.

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Syncope.—(Vol. 1892, p. 273) In cardiac hypertrophy, Broadbent uses diet, aperients, and eliminants—*e.g.*, Nitro-glycerine and Nitrites to diminish the arterio-capillary resistance. For senile heart weakness, Balfour recommends Recumbent Rest after meals, guarding against overeating, gentle exercise and Digitalis if necessary, which may be combined with Mercury in gouty cases. Cactus Grandiflorus, 1 to 5 minims for angina pectoris; pseudo-angina and hypertrophy, also for the "Tobacco" heart. Strychnia Sulphate, $\frac{1}{30}$ gr., increased to $\frac{1}{15}$ gr. three or four times daily, hypodermically, is a valuable tonic, unless the nervous and muscular elements can no longer react to stimulation. Hammond uses Cocaine, $\frac{1}{4}$ gr., three times a day for defective cardiac innervation and muscular weakness.

Rumms and Ferrarini use Caffeine and Sparteine for cardiac weakness, but if due to aortic stenosis and insufficiency, or to some resistance in the systemic circulation, Strophanthin is preferred. In mitral stenosis or pulmonary obstruction, Digitalis Adonidin and Convallaria. To this group Sée adds Iodide of Potassium. Auldo commends Arsenic as a cardiac tonic (p. 19).

HEPATIC COLIC.

Frank J. Wethered, M.D.

The most important contribution to our knowledge of the treatment of hepatic colic, is contained in a paper read by Dr. Ferrand,[1] before a meeting of the Paris Academy of Medicine, on March 8th, 1892.

The following are his conclusions: (1,) **Glycerine** given by the stomach is absorbed unchanged by means of the lymphatics, especially by those passing between the stomach and the hilum of the liver and the gall bladder; (2,) It is a powerful cholagogue and a valuable remedy in hepatic colic; (3,) In relatively large doses—20 to 30 grammes—it brings an attack to an end; (4,) In small doses—5 to 15 grammes—glycerine taken every day in a little alkaline water prevents fresh attacks; (5,) Without being a lithontriptic, glycerine is the remedy *par excellence* for biliary lithiasis.

Another French writer, Dr. Lemoine,[2] also gives some valuable hints as regards the treatment of hepatic colic.

If no vomiting is present, he has recourse to ethereal solutions or those containing chloroform, as follows:—

℞ Syrupi Acaciæ f℥iv | Æther. Sulphur. f℥j

Or

℞ Chloroformi ♏xv | Mucilag. Acaciæ f℥ij
Tincturæ Myrrh. ♏xv | Syrupi f℥iijss

Sig.—1 tablespoonful of either of these prescriptions every fifteen minutes.

If vomiting is a pressing symptom, it is to be arrested by giving small pieces of ice and sedative drinks along with very small quantities of cold beef-tea or milk. A turpentine stupe or other hot application may be applied to the abdomen, which should be covered by a rubber cloth to preserve the heat and moisture. Dry heat may be used in place of moist heat, if desired. Liniments are without effect, and mustard plasters may injure the skin, but prolonged and very hot baths are of service. Lemoine also uses the following suppositories:—

℞ Extract. Belladonnæ | Olei Theobromæ 5jss
Extract. Opii āā gr. ⅓ |

Ft. in suppositorium no. 1.

Or

℞ Extract. Opii gr. ⅙ | Olei Theobromæ 5j
Pulv. Castor. gr. xv |

Ft. in suppositorium no. i.

Dr. Ralfe[3] contributes a paper on the subject of treating gall stones and renal calculi with **Turpentine.** After recording some cases, he proceeds to consider how turpentine acts in causing the expulsion and the prevention of calculi. He says, "As regards expulsion, it has

been stated that turpentine acts powerfully as a diuretic, and thus helps in washing down the stone. This may be so when turpentine is given in small doses for some time, and may thus help to wash down a small recently-formed concretion ; but when there is much colic, and there is a decided tendency for the stone to pass, I have noticed that, so far from turpentine acting as a diuretic, it has an opposite tendency ; indeed, on these occasions one has to be very guarded as to giving the drug, as strangury is then so easily induced. On the other hand, turpentine decidedly increases the colic, and it would appear as if it actively stimulated the muscular fibres of the pelvis of the kidneys and ureters, and also of the gall-bladder and bile-ducts.

"In long-standing cases turpentine aids the passage of a calculus by improving the condition of the mucous surface of the ureters and bile-ducts ; for by diminishing the swelling caused by catarrh there is less resistance presented to the onward passage of the concretion, and especially allowing it to pass while still small. In those cases also in which there is a tendency towards the constant formation of calculous concretions, as shown by a more or less frequent recurrence, turpentine acts as a preventive by rendering the secretion less tenacious and viscid,—that colloid medium, which all writers who have described the formation and growth of calculous concretions insist on as essential for their development. Finally, with respect to some forms of gall-stone, not only does turpentine aid in preventing their formation by its action on the mucous surface of the gall-bladder and rendering the contents less viscid, but also probably exercises an antiseptic action on the bile secreted, and thus prevents the precipitation of cholesterin, which, we know, becomes less soluble as bile loses its natural alkaline reaction, which it does if any fermentative changes take place in it."

Olive Oil has long been used in the treatment of gall-stones, and many speak highly of its value. Dr. M'Court,[4] of New York, considers that olive oil is a specific remedy for biliary colic, and in no instance has found it fail. When necessary, **Morphia** hypodermically is used also. Relief is generally complete in about an hour, often in thirty minutes.' The patient is prepared for bed, receives a 3 ounce dose of oil, lies down instantly on the right side with a slight inclination backwards, and the pillows are removed from the head and placed under the crest of the right ilium, so as to elevate the pelvis, favour the regurgitation of oil from the duodenum through the common bile-duct, the hepatic and cystic ducts, and the conveyance of the remedy to the obstructed viscus. On the following morning a

brisk cathartic or even a seidlitz powder will, he says, produce evacuation of the gall-stones and relieve the case.

Professor Jean Beaumetz,[5] in a lecture on "the biliary liver," also speaks enthusiastically of the use of olive oil. He says: "Failure constitutes the exception, and what is strange, the large quantity of oil is well borne and the patients do not vomit. I say large quantity, for you must give in one dose 200 grammes (or nearly a tumblerful) of pure olive oil, and, in order to do away with its disagreeable taste, you can order the patient to rinse the mouth with brandy and water, or to suck a little orange juice. In my own practice, to the olive oil I add bile, and with 200 grammes of oil I combine 20 grammes of ox-gall. This mixture is slightly bitter, but is well tolerated by the patient, and the results have been the same as with the oil, so that it is difficult for me to credit to the bile what really belongs to it in these cases."

He also recommends **Salicylate of Soda** and **Salol**, associated with **Salicylate of Bismuth.** In addition, he lays great stress upon the dietetic treatment, prescribing a vegetable diet, abstinence from alcoholic drinks, and the usage of alkaline waters.

In the same lecture, he briefly refers to the operative treatment in the case of gall-stones, and says: "Whenever, whether by reason of a calculus or some morbid alteration of the bile-ducts, there exists an insurmountable obstacle to the outflow of the bile, and the latter accumulates in the gall-bladder and distends it so as to constitute a tumour, which is sometimes mistaken for hydatid cysts, the duty of the physician is to call in the help of surgery to obtain the definite cure of the patient; and such surgical intervention will be in the great majority of cases followed by success."

Whilst writing on this subject we may notice some experiments undertaken by W. N. Nissen,[6] as to the influence of the **Alkalies** on the secretion of the bile on a dog with biliary fistula. His results are as follows: After having first satisfied himself that the quantity of bile secreted was subject to but little variation, and that water, even when administered in very large amounts, was without influence, he proceeded to study the action of sodium chloride, sodium sulphate, bicarbonate of sodium and the acetate of potassium, phosphate of sodium, sulphate of magnesium, and Carlsbad salts. From his experiments it results that concentrated solutions of the alkalies considerably diminish the quantity of bile excreted. In dilute solution —½ to 1 per cent.—they produce no influence upon the secretion of bile; the acetate of potassium is most active in reducing the biliary secretion, which may be 57 per cent. below normal under the action of this drug. Its action, however, is only transient. The author believes

that the diminution of the biliary secretion under the influence of the alkalies is due to impoverishment of water, for he finds that the more concentrated the alkalies the greater the diminution in the amount of the bile, which becomes more concentrated and the proportion of colouring-matter in it becomes increased. The therapeutic action of alkalies in jaundice is not attributable to their cholagogue action, but to the diminution in the formation of the bile and to their solvent action on the mucous membrane, which constricts the biliary ducts. In jaundice the author advises the association of potassium acetate with Carlsbad water.

REFERENCES.—[1]Ferrand, "Sem. Méd.," Mar. 9, 1892, and "Brit. Med. Jour.," Mar. 26, 1892; [2]Lemoine, "Revue Thérap. Médico-Chir.," Nov. 1, 1891, and "Therap. Gaz.," Feb. 15, 1892; [3]Ralfe, "Lancet," Dec. 5, 1891: [4]M'Court, Ibid., Dec. 14, 1891; [5]Beaumetz, "Therap. Gaz.," Sept. 15, 1891; [6]Nissen, Ibid., Oct. 15, 1891.

Synopsis.—(Vol 1892, p. 285) Seé recommends **Salicylate of Sodium**, given with a large quantity of water as a cholagogue; also **Olive Oil**, habitually used by sufferers from gall stones, avoiding active purgatives which cause spasm, and drugs which lessen biliary secretion—*e.g.*, **Calomel, Copper, Iron**, also **Morphine, Atropine, Strychnine** and **Alkalies**. Eloy advises **Hot Baths** for hepatic colic; and Witrowski found 2 injections of **Pilocarpin** (half a syringeful of 2 % solution) give relief after morphine failed.

HERNIA.

A. W. Mayo Robson, F.R.C.S.

Although there are few commoner surgical ailments than hernia, there is no subject more interesting to the surgeon, as a reference to the "Annual" for several years past, and to the papers here referred to, will show.

The safety of operation for the cure of non-strangulated hernia, and the immediate and in many cases the permanent success of the so-called "radical cure," makes a resort to the operation in an early stage a much more common event. This is fortunate both for the subject and for the operation, as in a patient otherwise healthy the operation is practically devoid of risk, if due precaution with regard to asepsis and other details be observed; whereas when a hernia is allowed to enlarge and to become irreducible, the risks of operation are decidedly increased, and yet the operation in such cases must be faced if the patient wishes to avoid the constant discomfort and the danger of his disease.

The application of a truss in women is of little use, and even in umbilical hernias eighteen out of twenty are valueless even when they are comfortable to the patient. In young subjects, where a cure has apparently resulted from the application of a truss, the first pregnancy often causes a relapse. The immediate dangers from hernia are

chiefly those attributable to pregnancy and child-birth. Although strangulation seldom occurs at this time, the hernia is usually increased. The secondary dangers are more formidable. The hernia is likely to be painful, irreducible and progressive. The organic changes in women are greater, more rapid and more serious than in men.

Lucas-Championnière[2] says that operation should always be undertaken while the patients are still young, although very good results have been obtained after the menopause. Delays only expose the patient to useless dangers and lessen the value of the undertaking. The occupations of women are favourable to the continuance of the cure, and pregnancy following laparotomy has been proved not to be a serious complication.

Salzer[20] describes a new method for the radical cure of femoral herniæ by utilizing a flap of fascia turned up from the pectineus muscle, with which he occludes the femoral canal. The same idea has occurred to Prof. Watson Cheyne, who, however, makes the operation more complete by using a flap composed of pectineus muscle.[21]

Bottini[1] says that to attempt to close up, by itself, the passage down which the hernia has travelled, or to block up the external orifice by itself, is a delusion; the resulting resistance is far too weak to withstand abdominal pressure. It is the internal orifice, and this alone, which should be closed (by sutures). This is done by bringing together its margins, without disturbing the anatomical relations of adjoining structures, whether the hernia be oblique or direct. The sac is a secondary matter; it may be excised—all or part—or left according to circumstances. Whether the hernia be free, incarcerated, or strangulated makes no difference; the methodical closure of the internal opening is the only thing aimed at. The hernia is thoroughly opened up along its length, the aponeurosis of the external oblique, and the fibres of the internal oblique are reflected on a director, and the neck of the sac is laid bare, and very carefully and thoroughly isolated. Then the bowel is returned, the sac being incised or not according to circumstances; in congenital herniæ, incision is best avoided. Two Hagedorn's needles armed with catgut are passed, the first from within outwards, embracing not only the free margins of the internal oblique and transversalis, but the aponeurosis of the external oblique; the lower suture passes well into the thickness of Poupart's ligament. Then the needles are withdrawn, and a finger is introduced into the orifice to control the tightness of the threads which are now drawn up. The patient is directed to

cough, and if any bulging be felt, a third suture may be inserted; this, however, is seldom necessary. After a fortnight, the patient is perfectly cured, no truss or bandage being afterwards required. Nine femoral, twenty-one inguinal, and one umbilical herniæ were thus operated on, all with perfect success.

An excellent description of Bassini's operation, which obliterates the inguinal canal by deep sutures, is given by Mr. Hulke,[7] in a clinical lecture in the "Lancet." Mr. F. Page also describes a case treated by Halsted's operation,[8] which differs from Bassini's, in that besides obliterating the inguinal canal by deep sutures, it transplants the cord and closes the external abdominal ring. The operation deserves more attention than it has hitherto received. Mr. F. F. Burghard[18] speaks enthusiastically of Bassini's operation, which he has performed eight times with most satisfactory results. Dr. Escher, who has operated fifty-three times by Bassini's method, regards it as the best operation with which he is acquainted.[19]

Edward Steffen,[5] of Zurich, during the past three years, has treated three hundred and twenty-six cases of reducible herniæ by Schwalbe's method, and has published the results in the "Correspondenz blatt für Schweizer Aerzte." In most instances the patients were able to continue their work during treatment. After the injection, the puncture was cleaned and covered with mercurial collodion. Notwithstanding, in a few cases, sloughing took place; but this acted rather beneficially than otherwise. The number of injections in a single case varied from six to one hundred and sixty-eight, the latter extending over a period of two years and a half. A medium-sized rupture in an adult required from 80 to 100 grammes of alcohol. The author used alcohol 70 per cent. in doses of 1 to 4 grammes, substituting in exceptional cases extract of oak bark. Latterly he found the addition of phosphoric acid, in the proportion of 1 to 200, advantageous. In thirteen cases the result of the treatment is not known, in twenty-nine a cure was not possible from various causes, such as obesity or size of the rupture; of the remainder, two hundred and forty-five cases are reported cured, and nineteen improved. The longest time taken to effect a cure was four years, the shortest, one year. Of two hundred and fifty-seven inguinal herniæ, two hundred and sixteen cases were cured and sixteen improved, with twenty-three relapses. Of thirteen femoral herniæ, nine were cured and two improved, with one relapse. Of nineteen umbilical herniæ, seventeen were cured, with no relapse. Of four herniæ in the linea alba, three were cured, the other improved. It appears that the more recent the hernia and the younger the patient the more favourable the prognosis.

and the ambulance treatment, with intervals of three to seven days between the injections, gave better and more lasting results than the treatment in bed with daily injections.

Mr. Tait's proposition to treat hernia by abdominal section as a routine practice scarcely seems likely to be followed, except in a few unusual cases; two such are reported by Dr. Keen,[9] one a properitoneal, the other a Littre's hernia. In the latter the presence of symptoms of strangulation of bowel, with the absence of signs of hernia, led to the performance of laparotomy, and the discovery of a Littre's hernia in the right femoral ring. In a case of my own not yet published, I discovered by abdominal section an inguinal hernia reduced *en masse*, and was able to treat it successfully. In this case there was no history of the reduction *en masse*, and the presence of a small reducible lump in the inguinal canal added to the difficulty in diagnosis. The reducible tumour in the hernia site turned out to be hypertrophied subperitoneal fat.

The presence of deposits of tubercle in the walls of a hernial sac, or in its contents—omentum or intestine, as the case may be—is a condition which, though not very uncommon, has hitherto attracted little attention, no reference being made to it in works on surgery or in treatises on hernia. Last year, Jonnesco, a French surgeon, published a case of this nature, which had recently come under his observation. In the same paper he gave particulars of all the cases hitherto recorded, which are only ten in number, and all occur in foreign literature. From a consideration of these cases, it appears that deposits of tubercle may originate in a hernial sac or its contents, and there remain localized, at any rate for a time. In other instances the peritoneal lining of the abdominal cavity also becomes affected, or there may be deposits of tubercle in other parts, as for example, in the lungs. It is suggested that, given a predisposition to tuberculosis and the co-existence of a hernia, the sac or its contents are likely spots for the manifestation of tubercle, for the following reasons: (1,) The hernial sac forms a dependent pouch or recess shut off from the general peritoneal cavity, where the circulation is carried on somewhat feebly; (2,) The contents of the sac, as well as the sac itself, are occasionally the seat of slight attacks of inflammation; (3,) They are also continually subject to irritation of various kinds, as for example, attacks of obstruction, external friction, the pressure of a truss, etc.

It seems not improbable that these causes combine to render a hernial sac, as it were, a *locus minoris resistentiæ*, favourable for the selection and development of tubercle.

This condition is well illustrated by two cases related by Mr. Southam.[12]

Cases of cæcal hernia are sufficiently rare to be of interest, many surgeons having passed through a long course of hospital practice without ever having seen one. It is seen more commonly in children, and is usually of congenital origin, being covered completely by peritoneum and lying in its own sac. In other cases, especially where the hernia is of the acquired form, it follows a pre-existing enterocele, the sac of which enlarging and growing downwards, tears away the peritoneum from the iliac fossa, and later, if the enlargement continues, partially deprives the cæcum itself of its peritoneal covering, at the same time displacing and drawing down a portion of it. Such was the probable course of events in the case related by Dr. Shepherd.[11] These cases cannot be readily diagnosed before operation, and to the surgeon they offer great difficulties in operating for the radical cure. They are not easy of reduction, and are often of large size.

I have operated on two cases; in one appendicitis had occurred in the hernial sac, producing numerous adhesions; in the other, the cæcum was only covered by peritoneum on the inner side, the outer half of the hernia having no peritoneal sac.

Gangolphe[12] makes the following generalizations: (1,) Herniæ of the large intestine may be accompanied by an appendicitis in the hernia sac; (2,) The localization of the inflammatory troubles to the hernia, the appearance of a fœtid suppuration without issue of gas or of solid matters, without serious functional troubles of the intestines, may perhaps in the future help in the diagnosis of this complication; (3,) The radical cure, undertaken after a sufficient delay, is rendered particularly difficult, both by the adhesions which form and also by the difficulty experienced in recognizing the presence of the intestine; (4.) As a general rule the necessary incision should be made along the antero internal parts of herniæ, for in this way wounding the large intestine, should this be present, will be avoided.

There are few rarer surgical maladies than hernia into the foramen of Winslow, and the few recorded cases have been verified by *post-mortem* examinations. The case related by Mr. Neve,[13] therefore, in its fortunate result, is unique. The patient came under his observation on the seventh day of the obstruction, was watched closely for twenty days, during which intussusception was considered the most probable cause. On account of continued symptoms and progressive emaciation an operation was performed, at which a hernia into the foramen of Winslow was discovered, though reduction could not be

effected. Forty-eight hours later a large enema was given for recurrent spasmodic pain, and from that time onwards all symptoms were relieved, and the tumour was found to have disappeared. Rapid and complete convalescence then set in.

Schwartz and Rochard,[23] in reporting a fatal case of diaphragmatic hernia, propose the treatment of such cases by a transpleural operation.

A similar method of treatment has also been proposed by Perman as the only means of saving life in any case of strangulation of a large diaphragmatic hernia. Postempski and other Italian surgeons have performed the transpleural operation with success in the treatment of omental diaphragmatic hernia of traumatic origin.

Witzel[15] gives a very valuable contribution, based upon his experiences at the Bonn clinic, upon the subject of herniæ occurring in the linea alba. The ages of the patients varied from thirty to fifty years. According to Witzel about one half of cases of this variety of hernia are to be referred to a traumatic origin; the trauma consisting in most cases either of a violent strain or a forcible backward bending of the body. In other cases it may occur without this factor, the fatty tissue in the cross-meshes of the linea alba undergoing absorption in connection with emaciation, thus leaving openings into which, during exertion, a hernia may be crowded.

Median abdominal herniæ are usually of a mushroom shape, the broad portion of which is made up of a somewhat heavy layer of subperitoneal fat, which, together with its attached peritoneum, forms a funnel-shaped investment for the hernia proper. Not infrequently the sac remains entirely empty, or may be found to contain only a piece of adherent omentum; next in frequency intestine is found within the sac, and more rarely still a portion of the stomach wall. In a case quoted from the Bonn clinic there existed three median herniæ; the first was found to be empty, the second contained omentum, while the third was occupied by a loop of intestine. In another case of hypogastric hernia, the parts about the hernial passage were completely adherent to the summit of a loop of small intestine.

The symptoms of the variety of hernia under consideration are those of pain, principally. This is not confined to those cases in which the hernia consists of omentum or intestine, or both, but is found to be an almost equally prominent symptom in cases where only an empty sac is present. In addition there are present gastric symptoms and nervous disturbances. As the affliction is quite liable to be mistaken for internal affections, frequent examination of patients complaining of these symptoms should be made with reference to this

condition. This examination should not only be made with the patient in the dorsal decubitus, but in the upright position as well, with the body bent forward, and at different times following a meal.

The most rational and successful means at our command for the treatment of this variety of hernia consists of radical operation.

J. Boeckel[17] reports the following case: A young "man" suffered great pain from a hernia which had existed from birth, and gave great pain. Radical cure was undertaken. The sac was empty and so was the inguinal canal. On pressing the parieties above the groin a white, shiny, oval body was forced out of the external abdominal ring. A fringed structure lay close to it. A pedicle was easily made; the prolapsed parts were then cut away and the sac itself was resected. The patient made a good recovery. The parts removed consisted of a bicornute uterus, containing a true endometrium with ciliated epithelium, a Fallopian tube, and a testis bearing an epididymis and a distinct vas deferens and a broad ligament. The subject in all other respects was a male.

It is a recognized fact that in hospital practice the operation for the relief of strangulated hernia is attended by a high rate of mortality, this being generally due to one of two causes: either (1,) The delay which has been allowed to elapse before surgical interference is sought; or (2,) The injury which has been previously inflicted on the contents of the hernia by forcible, prolonged, or repeated attempts at taxis. The consequence is that the condition of the bowel is such that it is frequently past recovery, even though the strangulation is relieved immediately after the patient's admission into hospital. This fact is well illustrated by the following statistics of eighty-five cases of herniotomy, which have been under the care of Mr. Southam in the Manchester Royal Infirmary during the past twelve years, in almost all of which the operation was performed shortly after admission:—

	No. of Cases.	Recovered.	Died.	Mortality.
Femoral . .	37	22	15	40·5 per cent.
Inguinal ...	36	22	14	38·8 ,,
Umbilical ...	12	3	9	75·0 ,,
Totals	85	47	38	44·7 per cent.

At first sight the proportion of fatal cases appears to be unusually great, but on comparing the results with those of other large institutions, it will be found that the average mortality attending herniotomy in hospital practice varies from 32 to 46 per cent., if the three varieties —femoral, inguinal, and umbilical—are taken collectively.

REFERENCES. — [1] Bottini, Operations for Hernia, "Brit. Med. Jour.," April 9, 1892; [2] Lucas-Championnière, Radical cure of Hernia

in Women, "Ann. of Surg.," May, 1892 ; [3] Broca, Radical Cure of Hernia in Infants, "Therap. Gaz.," May 16, 1892 ; [4] H. O. Marcy, Radical Cure of Hernia in Women, "Ann. of Surg.," April 1892 ; [5] Steffen, Treatment of Hernia by Injection of Alcohol, "Lancet," March 19, 1892, p. 656 ; [6] Huck, Treatment of Hernia by Injection of Alcohol, "Brit. Med. Jour.," Jan. 2, 1892 ; [7] J. W. Hulke, Bassini's Operation, "Lancet," July 16, 1892 : [8] F. Page, Halsted's Operation, Ibid., Sept. 10, 1892 ; [9] W. W. Keen, Hernia treated by Laparotomy, "Internat. Med. Magazine," Feb. 1892 ; [10] F. A. Southam, Tubercle of Hernial Sac, "Med. Chronicle," April, 1892 ; [11] F. J. Shepherd, Cæcal Hernia, "Annals of Surg.," Feb. 1892 ; [12] Gangolphe, Hernia of large Intestine, "Brit. Med. Jour.," April 2, 1892 ; [13] Arthur Neve, Hernia into foramen of Winslow, "Lancet," May 28, 1892 ; [14] Niemöller, Diaphragmatic Hernia, "Brit. Med. Jour.," June 4, 1892 ; [15] O. Witzel, Median Abdominal Hernia, "Ann. of Surg.," Dec. 1891 ; [16] F. A. Southam, Statistics of Operation for Strangulated Hernia ; [17] J. Boeckel, Uterus in Hernial Sac of a reputed Male, "Brit. Med. Jour.," May 7, 1892 ; [18] F. F. Burghard, Halsted's Operation for Hernia, "Lancet," Sept. 17, 1892 ; [19] Escher, Bassini's Operation for Radical Cure, "Ann. of Surg.," June, 1892 ; [20] Salzer, New Operation for Radical Cure of Femoral Hernia, "Brit. Med. Jour.," Oct. 1, 1892 ; [21] Watson Cheyne, New Operation for Radical Cure of Femoral Hernia, "Lancet," Nov. 5, 1892 ; [22] J. Ransohoff, Treatment of Gangrenous Hernia, "Ann. of Surg.," Oct. 1892 ; [23] Schwartz and Rochard, Treatment of Strangulated Diaphragmatic Hernia, "Brit. Med. Jour.," Nov. 5, 1892.

HERPES ZOSTER. *T. Colcott Fox, M.B.*

Prof. Bókai, of the Children's Hospital at Buda-Pest, from the observation of cases where varicella has apparently given rise to zoster, and *vice versâ*, suggests that an attack of varicella, instead of exhibiting a general eruption may, under certain circumstances, have the latter so circumscribed as to form the segment peculiar to zoster. Bilateral zoster on the same level is known to be very rare ; but George Carpenter records a case in a child aged four years.

Vergely records a zona in a case of diabetes, apparently due to neuritis.

Staub observed, over a course of four years, three attacks of zoster of the abdomen in a girl of sixteen. The ulceration and gangrene produced were very grave.

Valdettaro has shown that in certain states the fluid of the vesicles contains no organisms which produce symptoms in animals, or which can be cultivated. When, however, the contents are whitish, thick, and purulent, an organism can be cultivated, and produces septic symptoms in the corneæ of animals. St. Clair Symmers isolated a bacillus *(b. viridans)* in the lymph of herpetic vesicles from the lip of a boy with typical acute croupous pneumonia. It differs from Trick's *b. virescens* and from *b. fluorescens liquefaciens*.

REFERENCES—Vergely, "Progrès Méd.," Sept. 20, 1891; Staub, "Arch. f. Derm. u. Syph.," xxiv. 2, 1882; Bokai, quoted in "Lancet;" G. Carpenter, "Brit. Jour. Dermat." Jan., 1892; Valdettaro, Graduation Thesis, Genoa., 1892 (quoted in "Brit. Med. Jour."); W. St. Clair Symmers, "Brit. Med. Jour.," Dec. 12, 1892.

Synopsis.—(Vol. 1892, p. 292.) Smith adopts **Wet Cupping** as near the disease as possible. Barclay gives **Phenacetine** and **Quinine** in combination internally. Neilsen found 1.8% of psoriasis patients treated by **Arsenic** developed zona, but none where **Iodide of Potassium** was used. In recurrent herpes, **Arsenic** is valuable (p. 20). For herpes intertrigo and circinata, an ointment of **Extract of Cassia Alata Leaves**, with **Lanolin**, gave good results (p. 30).

HICCOUGH. *Græme M. Hammond, M.D., New York.*

Leloir reports the case of a girl twelve years of age who suffered from severe hiccough, the spasms occurring every half minute and interfering with sleep and the vital functions of the body, so that it was a very serious matter to the life of the child. After trying a number of remedies unsuccessfully, it occurred to him to make **Compression of the Phrenic Nerve** on the left side between the sterno-clavicular attachments of the sterno-cleido-mastoid muscle. The digital pressure, though painful, was kept up for three minutes, and, at the end of this time, the hiccoughs had disappeared and did not recur.

REFERENCE.—"Journ. Nerv. and Ment. Dis.," Nov. 1892.

HYDROA VACCINIFORME (Bazin). *T. Colcott Fox, M.B.*

Although this is a very rare disease, it may be noticed here on account of its interesting nature, its intractability, and the disfigurement it causes. It was first described by Bazin ("Cours de Semiótique cutanée," 1855), and again independently by Jonathan Hutchinson, under the term "Summer Prurigo." Brooke suggests the name *Hydroa Æstivalis*. The eruption shows itself primarily on the unclothed parts of the body, especially the nose, cheeks, hands, ears, and later on tends to evolve on clothed and protected regions. There seems little doubt that it is excited by exposure to fresh air or the sun's rays, and thus the eruption will recur or be intensified each summer. The eruption begins as small red papules or nodules, which increase peripherally to a limited extent. The papules have a strong tendency to vesicate, and to form lesions strikingly like vaccine or variola pustules, and to leave rock-like scars. Hutchinson possesses remarkable drawings illustrating the extensive lupus-like ravages which may finally ensue.

REFERENCES.—Buri, "Monat. f. prakt. Dermat.," Sept. 1, 1891; Brooke, "Brit. Journ. Dermat.," April, 1892.

HYDROCELE. *F. S. Eve, F.R.C.S.*

Dobrokhotoff[1] gives a digest of one hundred and nineteen cases of hydrocele treated by injection of strong tincture of **Iodine.** In none of the hundred and nineteen cases did any untoward complications occur. Of the total, one hundred and eighteen patients were cured, and only in one case the operation failed to attain its object (adhesive inflammation), incision being ultimately (on the seventeenth day after tapping) performed. No récidives occurred in any of the patients (in some of the cases six years have elapsed since the operation). Dr. Dobrokhotoff comes to the conclusion that in an overwhelming majority of cases of hydrocele the iodine injection affords the simplest, surest and safest means for obtaining a radical cure, the method being especially convenient and indicated in country practice.

The preparation used is iodine tincture, *Ph. Russ.* (1 part of iodine to 10 parts of a 95 per cent. alcohol), previously kept in an open vial for several days. Incision was only resorted to in cases where the tumour is non-translucent, be this due to thickening of the cavity walls, or to intra-vaginal blood effusions.

In the course of a discussion, Dr. S. L. Ebermann, of St. Petersburg, stated that he had obtained the best results from incision into the tunica vaginalis. It is, however, contraindicated in cases of (*a*,) Considerable thickening of the tunica vaginalis ; (*b*,) Opacity of the dropsical contents ; and (*c*,) Enormous enlargement. In cases of the latter category a great distension of the membrane may interfere with the development of an effective adhesive inflammation. Professor V. I. Küzmin, of Moscow, declared that he decidedly prefers tapping, followed by irrigation of the cavity with a 3 or 4 per cent. **Carbolic Acid** solution. While similarly securing a radical cure the carbolic injection does not induce vaginal adhesions, leaving the testicle in its normal biological conditions. Moreover, the method is painless, while the iodine injections are excedingly painful.

Dr. Millikin[2] reports equally good results with injections of liquified crystals of carbolic acid, after thorough evacuation of the fluid.

The method is practically painless, confinement to bed is in no sense essential to the relief of the condition, and unless an inordinate amount (over 30 minims) be used sloughing should never occur.

Usually within the first twenty-four hours the height of the inflammatory reaction will have been reached.

Of fifty-four cases, nine were never seen after the injection ; five paid one visit within the first week only, and four were under observation. This brings the number to thirty-six, all of whom were cured ; twenty-seven had one injection, four had two injections, five had three injections.

In no case did sloughing occur, and not one of the thirty-six patients lost more than twenty-four hours from business. From two to six weeks is necessary for absorption of the exudation to take place, and thickening of the sac may remain much longer.

Although 1½ drachms of the acid have been injected without any detrimental effects, a smaller quantity has caused sloughing. He therefore prefers doing a second, or even a third operation, using in no case more than 30 minims.

Millikin concludes as follows: (1,) Carbolic injection is a safe method for the cure of hydrocele; (2,) It is practically painless; (3.) The patient is allowed to attend to business without more than one day's delay; (4,) The disagreeable effects of an anæsthetic are avoided.

The writer's own experience fully agrees with the observations of Millikin. He has treated a large number of infants at the Evelina Hospital by injection of carbolic acid with equally good results, and complete absence of complications. It was not necessary to take the patients into hospital. From 6 to 10 minims of carbolic acid, liquified by a sufficient quantity of glycerine, were used (*i.e.*, 8 parts of carbolic acid to 1 part of glycerine).

REFERENCES.—[1] "Annals of Surgery," Feb., 1892; [2] Ibid., Oct. 1891.

HYDROCELE (in the Woman). *John H. Glenn, M.D., B.Ch.*

On the occasion of two cases operated upon by Madelung, the author passes in review the ancient published observations upon the condition termed hydrocele in the woman, and due to the collection of fluid in the imperfectly obliterated canal of Nuck. He thus has collected sixty-one cases. *Apropos* he points out that recent anatomical investigations have not confirmed those which S. Duplay, in 1865, carried out to deny the existence of the canal of Nuck. He ends by a clinical and therapeutical study of these hydroceles, giving as the best treatment antiseptic extirpation.

REFERENCE.—Wechselman, "Archiv. fur klin. Chir."

HYDROCEPHALUS. *Henry Dwight Chapin, M.D., New York.*

Dr. Phocas[1] reports two cases of the surgical treatment of hydrocephalus. In the first case, trephining and draining of the lateral ventricle with death, due to infection; in the second, recovery from the operation, and very considerable improvement in the general state. The procedure was craniectomy, with puncture in the subarachnoid space, without drainage of the lateral ventricle.

Dr. D'Astros[2] claims the existence of a hydrocephalus due to hereditary syphilis. In every congenital or early hydrocephalus

(within the first three months) a syphilitic origin should be suspected. Surgical intervention, such as puncture and drainage of the ventricle, may render better service since we can combine with the palliative action of the drainage, the directly curative action on the cause of the effusion of the anti-syphilitics.

REFERENCES.—[1]Phocas, "Mal. de l'Enf.," Paris, 1892, x., 75; [2]D'Astros, "Mal. de l'Enf.," 1891, 481, 543.

HYPEREMESIS GRAVIDARUM. *Wm. J. Smyly, M.D., F.R.C.P.*

In the "Centralbl. für Gynækologie" for September, 1891, Dr. Cohnstein recommends large doses of **Bromide of Potassium** in this affection, which he agrees with Friedreich, Kaltenbach and Ahfeld in regarding as hysterical.

A diagnosis of purely functional cases from those due to organic disease must, of course, be made. The best results are obtained in fresh cases, therefore in the earlier rather than in the later periods of pregnancy. If the sickness does not yield after a few doses, the bromide is not to be continued.

HYPERHIDROSIS LOCALIS.

Synopsis.—(Vol. 1892, p. 293.) For hands and feet: ℞ Ichthyol, ʒj; Vaselin, ʒjss; to be rubbed in night and morning, after washing in hot water. Apply **Belladonna Tincture**, 15 parts, in **Eau de Cologne**, 120 parts, at night.

HYPERTRICHOSIS. *T. Colcott Fox, M.B.*

Electrolytic Epilation.—As a considerable amount of ignorance and prejudice respecting this operation still exists in the medical profession, and as enquiries are not infrequent in the medical press, and non-medical operators numerous, it may be useful to state again that in experienced hands the operation is most successful, and results most gratifying. After a little experience the operation is quite easily managed. Sufficient information on the subject will be found in all the recent text-books on dermatology.

The references herewith appended are of interest.

REFERENCES.—Dubreuilh, "Ann. de Dermat. et de Syph.," 1892; Hayes, "Times and Register," Nov. 14, 1891.

Synopsis.—(Vol. 1892, p. 293.) To remove hairs Electrolysis is the best method. Allen permanently cured a case in a year and a half by applying a paste of **Powdered Air-slaked Lime** ʒj and **Orpiment** 2 grs., mixed with water. Allowing it to remain on fifteen to twenty minutes twice a week at first, then less frequently. Neumann's formula is ℞ Calc. Hydrat. ʒjss, Orpiment ʒiij, Amyli ʒj, Aq. Calcis q.s. ut fiat pasta. Clasen considers **Sodium Sulphohydrate** (1 part to 8 of water), and **Barium Sulphide**, 50 parts to 25 each of **Starch** and **Zinc Oxide**, the best depilatories.

HYPNOTIC SUGGESTION. *Græme M. Hammond M.D., New York.*

The subject of the treatment of mental diseases by **Hypnotic Suggestion** has recently been reviewed by Seppilli[1]. Voisin, by means

of suggestion made during hypnosis, witnessed the cessation of agitation, the disappearance of hallucinations, of delirious ideas and suicidal tendencies. In a case of dipsomania, a man, thirty-five years of age, who for ten years, had two periodic attacks a month, each attack lasting ten days, was completely cured after two hypnotic sittings. Another case, a lady, forty-two years old, had for four or five years felt an excessive desire for drink at the menstrual periods, and at these times consumed five or six bottles of wine daily, and a quantity of brandy. During hypnosis it was suggested to her that in the intervals between meals she would feel no desire to drink, and that at each meal only half a bottle of wine would be required. After a few sittings these suggestions had a salutary effect, and the lady left off her alcoholic habits. The same results were obtained in another case. Foud, of Zurich, suggested to four individuals affected with alcoholism that they would completely change their mode of life, and take part in a Temperance society. They did so. Ladame tried hypnotic suggestion in three cases of alcoholism. One case was cured, one was improved, the other was not benefited at all. A number of cases of hysteria, mild melancholia, and hystero-epilepsy are cited as having been benefited by this means.

From a study of these cases Seppilli concludes: (1,) Therapeutic hypnotic suggestion cannot be instituted as a general means of cure in the treatment of mental diseases, owing to the difficulty of hypnotizing the insane; (2,) Hypnosis succeeds most readily in the hysterical and epileptic; (3,) The most certain results of hypnotic therapeutic suggestion have, up to the present time, been obtained in the psychoses depending upon hysteria and dipsomania; (4,) Hypnotic suggestion may be employed when the insane submit to it of their own accord, and derive benefit from it. The physician should watch for harmful effects which, in some cases, may be produced; (5,) Therapeutic suggestion made in the waking state is the most reliable and effective means of cure in mental diseases; (6,) In cases of melancholia without delirium, cases of fixed ideas, cases of alcoholism, and in slight forms of stupor, suggestion methodically repeated in the waking state in order to combat the morbid phenomena, may prove effectual; (7,) In the chronic form of paranoia, suggestion has never given favourable results.

REFERENCE.—"Dublin Journ.," Nov. 1891.

HYPOPYON KERATITIS. *William Lang, F.R.C.S.*

The important point in this disease is to be able to recognize it in its earliest stage, even before the appearance of the hypopyon, a stage which may last from two to seven or more days. If the patient

comes under observation sufficiently early, this may be done by noting the relation of the size of the ulcer to the intensity of the conjunctival and ciliary injection, and also by the amount of pain caused. Usually the injection is very great and the pain very severe, preventing sleep, whilst the ulcer may be quite insignificant in size. When the hypopyon appears, the diagnosis is easy, but then also the cure is less rapid, and the resulting corneal scar is larger. By the use of a drop of a 2 per cent. solution of **Fluorescein** the ulcer is readily stained, and all doubt as to its extent and shape avoided. This being done, it only remains to determine the treatment.

The writer invariably cauterizes such ulcers with the **Galvano-cautery**. Consequently he never has occasion to watch the appearance and progress of an hypopyon, the results being uniformly good. But if the hypopyon is already present, so much cannot be said in favour of the cautery, although he still considers that it is the best means we have at our disposal for the treatment of such cases. For in spite of careful and complete cauterization, the ulcer at times spreads even after more than one cauterization ; it will then be necessary to perform paracentesis or a Sæmisch section. Perforating the cornea through the base of the ulcer cannot be recommended, as the subsequent healing is so very slow.

In addition to the cautery, hot fomentations and compresses of boric acid or perchloride of mercury, together with the application, once or twice a day, of an ointment of hyd. ox. flav. ℈. eserinæ, 8 grains of the former to 1 grain of the latter, should be tried.

In those cases where an iritis is present, atropine is substituted for the eserine. If a galvano-cautery is not available, a very fine Pacquelin point answers nearly as well, but has the drawback that the temperature cannot be regulated ; other forms of cautery are much less satisfactory. Scraping the ulcer with a small, sharp steel spoon, touching it with nitrate of silver or perchloride of mercury stick, irrigating the eye and ulcer with mercury lotion, 1 in 1000, applying iodoform or performing a Sæmisch section and then irrigating the eye, may be employed in combination or separately, hot fomentations and compresses being applied afterwards.

HYSTERIA.

Synopsis.—(Vol. 1892, p. 294.) Pitres treats the fit by first releasing the patient from physical restraint of friends, and if the spasmodic zones can be found (usually in ovarian or epigastric regions) **Energetic Pressure** on them will terminate the attack. Prolonged gentle compression of the eyeballs often produces hypnotic sleep. Application of **Galvanic Electrodes**, one on the forehead, the other on abdomen or lower limbs, using a very strong current, and reversing it. Inhala-

tions of Ether, Chloroform, or Nitrite of Amyl, often abort the attack. Enemata of Chloral Hydrate, and Morphine injections, are suggested. Application of Icebags, Ether Spray, or permanent Mechanical Pressure over the spasmodic zones, may prevent recurrence. Paulet reports success from using Simulo, but not in the form of an alcoholic tincture. Chloralamide, 2 to 3 gram doses (p. 32). Ferric Bromide, 3 to 5 grs. (p. 43).

HYSTERICAL FEVER. *Græme M. Hammond, M.D., New York.*

Scarb in the "Centralblatt. für klin. Med.," reports a typical case of this disease.

Hysterical fever exists in two forms, one of which is continuous, the other intermittent. It is functional in character, and is associated with hysteria. The diagnosis rests upon its being coincident with hysteria, by irregularity and sudden cessation of the fever, by absence of results from antipyretics, and by the enormous high pulse rate, as compared with the slight increase of temperature. The fever may occur in simple hysteria, but is more frequently associated with hystero-epilepsy.

REFERENCE.—"Journ. Nerv. and Ment. Dis.," Sept. 1892.

IMPETIGO. *T. Colcott Fox, M.B.*

In addition to the numerous publications on suppuration, some papers have been published dealing specially with the influence of organisms in producing pustular eruptions.

Unna has reviewed the history of the subject, and pointed out that owing to Hebra's influence, Willan's impetigo was made to disappear in favour of eczema impetiginosum.

Bockhardt, in 1877, showed that there was a pustular eruption, caused by the staphylococcus aureus and albus, and distinguished from eczema and other pustular diseases by a series of specific symptoms. With this is grouped furunculosis and coccogenic sycosis. He then describes a form of impetigo, usually disseminated, and spreading by inoculation. The pus is situated just beneath the horny layer, between the latter and the intact rete, and is probably formed by chemotaxis.

Wickham finds by bacteriological researches that staphylococci aureus or albus are present in all secretions of impetigo, *both vesicles and pustules*, from the very beginning. Inoculation of either can reproduce impetigo. They are identical with those met with in other suppurations, *e.g.*, sycosis, etc. To the same category of disease, therefore, belong impetigo, ecthyma, folliculitis, furuncles, and to this group the term staphylococcia purulenta cutanea is given.

Walter Smith, of Dublin, in a very interesting *résumé* on "Recent Advances in the Ætiology of Diseases of the Skin," points out that "

is a distinct advance to know that impetigo, boils, and carbuncles are invariably produced only under the influence of micro-organisms. The clinical differences in these affections can be explained as follows: "Pus probably varies in virulence according to its origin, and pathogenic micro-organisms certainly vary in virulence according to the external condition in which they find themselves. In a word, the character of the mischief done—*i.e.*, the type of the disease—depends not alone upon its direct cause, but also largely upon the mode of entrance and the seat of development of the organisms (Bockhardt: Carré)." Probably suppuration can be induced without the aid of microphytes. They enter the skin generally through a breach of surface, but they can penetrate into the lymph channels of the skin through the intact epidermis (Carré). "If the micrococci invade only the epidermis, we have a superficial pustule, *i.e.*, (*a*,) impetigo; if the intruders find their way deeper down the hair-follicles and gland-ducts, we have a more violent inflammation, with or without necrosis, *i.e.*, (*b*,) a boil, phlegmon, or suppurative folliculitis, and a congeries of furuncular points; (*c*,) a carbuncle." Infection from within outwards occurs in only a small minority of cases, and may account for some cases of abscesses, boils, and other forms of local inflammation following in the wake of continued fevers, influenza, etc.

Smith then deals with the conditions in acne, scabies, syphilis, eczema producing pustules and in the latter case sometimes boils.

"In the theory of causation we have to allow for factors other than the mere presence or accumulation of microbes in the blood and tissues, *e.g.*, depression of vitality, general or local, the existence of local inflammation, the influence of cold, injury, and individual predisposition; and in regard to treatment we must not overlook the influence of the state of the blood—witness, diabetes and albuminuria—and the possible modifications of the soil that may be brought about by the state of the digestive organs, diet, and internal medicines."

Canali and others call attention to the occurrence of nephritis and hæmoglobinuria in children suffering from suppurative eruptions.

REFERENCES. — Unna, Med. Assoc., Hamburg, Jan. 12, 1892, ("Ann. de Derm et de Syph.," May, 1892); Wickham, "Union Méd.," Feb. 16, 1892, and "Brit. Jour., Derm," July, 1892; Walter Smith, "Dub. Jour. Med. Sci.," Jan. 1, 1892; Canali, Felici, Rinonapoli, "Rev. des Mal. de l'Enfance," April, 1892.

IMPOTENCE.

Synopsis.—(Vol. 1892, p. 73.) Brown-Sequard's treatment by **Spermine Injections** cured three out of four reported cases, their ages varying from twenty-nine to forty-nine, and the duration of the disease from one to four years.

INEBRIETY. *Græme M. Hammond, M.D., New York.*

In the "Times and Register," a number of articles appeared in which the subject of inebriety was fully discussed. Dr. Moyer considers inebriety to be a disease which renders the victim "in a measure irresponsible." He does not believe that there is any specific treatment for inebriety, or that there is any drug or combination of drugs that will relieve the cravings for liquor, except such as are themselves intoxicants, as strychnia, atropine and other alkaloids. Such drugs as coca and cinchona are indicated, but should not be given in such doses as to make them substitutes for the alcohol which is withheld. Chloral, bromides, and other sedatives are useful for producing sleep.

Dr. E. C. Mann concludes that as inebriety is a disease which paralyzes the will, the victim must be put under **Restraint** for six months or a year, if he would be cured. Dr. Mann reported three cases in which confinement for several months, rest in bed, the frequent administration of suitable **Nutrients, Tonics** and **Sedatives** brought about a perfect restoration. He relies much on prolonged **Warm Baths,** with cold to the head, while to promote sleep he favours the hypodermic injection of $\frac{1}{60}$ of a grain of **Hydrobromate of Hyoscine**. Central galvanization and general faradization are employed to invigorate the system. Tonics and out-door exercise are also spoken highly of.

REFERENCE.—"Med. Age," June 10, 1892.

INFANTILE SYPHILIS. *Henry Dwight Chapin, M.D., New York.*

Dr. Moncorvo advises the treatment of infantile syphilis by means of subcutaneous injections of **Mercurial Salts.** The author prefers the gray oil among the insoluble salts, and corrosive sublimate among the soluble salts. Antiseptic precautions must always be taken.

REFERENCE.—Moncorvo, "Mens. des Mal. de l'Enf.," July, 1891.

INFANTS (Rearing of). *Henry Dwight Chapin, M.D., New York.*

M. Pue proposes a method of *raising children in bran.* It consists of a cradle which has the wooden bottom taken out, and is then lined with a strong cloth. In this is placed sterilized bran to nearly half a yard in depth. A hair pillow is used. The baby has only a short flannel shirt on, and is naked from the navel downward. It is covered with a woollen blanket, and a wool lined dress is kept to put it in when taken up for nursing. It has thus full liberty of movement in all its limbs, while its dejections pass at once into the pure bran, keeping the child dry and clean, even if there is diarrhœa. This method is a cheap one, the bran not costing as much as diapers.

REFERENCE.—Pue, "Bost. Med. and Surg. Jour.," Oct. 15, 1891

INFLUENZA. *Frank J. Wethered, M.D.*

Although we have recently passed through three epidemics of influenza, there is still no great consensus of opinion as regards the best treatment of the disease. Medical men differ considerably in the lines they adopt, some preferring to treat symptoms as they arise, and leave the fever to follow its course, whilst others attempt to combat the fever by means of antipyretics.

Dr. H. A. Hare[1] gives a very good summary of the treatment he has adopted. In referring to antipyretics, he prefers the use of the derivatives of coal tar, and thinks that **Phenacetin** and **Antipyrin** should be employed.

A very favourite combination, with practitioners who have had a large experience, is one of **Salol** and **Phenacetin**. The action of the phenacetin in relieving the pain and in reducing the fever seems to point to it as a rational remedy, but the exact influence of salol under these circumstances is not so clear. Composed, as it is, of 60 per cent. of salicylic acid and 40 per cent. of carbolic acid, it seems to possess a therapeutical power different from that possessed by either of these two constituents alone ; for neither carbolic acid nor salicylic acid has much power for the relief of pain when used alone, unless, as in the case of carbolic acid, either is applied directly to the part affected. Perhaps the condition of pain in the lumbar and other muscles during the attack of influenza is in some unknown way associated with the condition which we have called "rheumatism," and in which salicylic acid does good in an unknown manner. Salicylic acid alone might be equally useful if it were dissolved in the intestine and did not irritate the stomach.

Dr. Hare proceeds : "On seeing a case of influenza during the first few hours of the attack, I resort to those remedies which have been in use by the profession for many years, and so far as I can learn, it is the custom of other members of the profession to give a mixture composed of **Tincture of Aconite, Spirit of Nitrous Ether,** and a solution of **Citrate of Potassium**, in preference to any other medicine at this time. This mixture possesses the advantage of increasing the action of the skin and kidneys, and of reducing the temperature, of quieting the circulation, and of being readily taken by the patient without danger of disordering the stomach at this time or later on, which is important, as this organ is apt to become irritable. As a general rule, citrate of potassium is given in too small doses, and, unless there are reasons to the contrary, it should be given in the dose of 15 to 20 grains three times a day."

When the stage of depression is reached, he advises the use of

strychnine, but prescribes the drug in rather larger doses than is usual, for, he says: "I believe that, as a general rule, **Strychnine** is given in very much smaller doses than safety requires, and that in many instances it fails to act because the doses are too small to struggle with the profound condition of exhaustion which is present. In an adult I can see no reason why $\frac{1}{20}$ of a grain may not be given twice or even three or four times in twenty-four hours, and in some cases I have given it every four hours without producing any of the symptoms of an overdose of strychnine. Divided doses are better than a few very large ones."

Contrary to the practice of most medical men, he does not press the use of alcohol, and explains his views thus: "Alcohol has not seemed to me to be of much value during the active period of the disease. In milk-punches and eggnogs it is, of course, useful during convalescence. If delirium comes on it has not seemed to be a symptom of very serious character either for immediate results or in influencing the prognosis as to the ultimate recovery of the case, and in cases of pneumonia, complicating grippe, in which delirium was the prominent symptom, it has seemed that delirium is not to be regarded in the same light as similar manifestations complicating ordinary pneumonia or other diseases. The delirium may be either talkative or muttering, but does not in the majority of cases require treatment, passing away with the fever and rarely extending into the stage of exhaustion."

For the irritative cough, **Steam Inhalations,** laden in the first stage with **Benzoin** or other innocuous and sedative substances, seem particularly useful. For the bronchitis, which is often present, it is generally sufficient to administer the ordinary mixtures containing **Ipecacuanha, Potassium Citrate,** in the earliest stages, and to follow them by **Chloride of Ammonium** and **Cubebs** in the later stages.

If sleeplessness is so pressing a symptom as to require attention, the **Bromides** may be given, but it will be generally found that the insomnia comes after the attack rather than during it, or in any event it will not require attention until the patient is convalescent. Under these circumstances **Chloral** or **Chloralamide,** or even **Sulphonal,** may be administered, care being taken, of course, in the case of chloral that the cardiac apparatus is in good condition, and in the case of sulphonal that it is administered in a powdered form, or dissolved in hot water, and given four or five hours before the time at which sleep is desired.

Dr. William Robertson[7] advises the use of pure **Benzol** in the treatment of influenza and its complications, and considers that it is as reliable a pulmonary antiseptic as any we know of. In an hour or so

after its administration it is clearly recognized in the patient's breath. The general results of its action in influenza are as follows: In about two hours after the first dose the headache and pain in the back disappear, and in about six hours the fever has subsided—not to return, so far as he has experienced, so long as the use of the drug is kept up. Within the same period the catarrhal symptoms also become less. Dr. Robertson thinks there is no tendency to the development of pneumonia in cases treated by the drug throughout, and early seen to. He prescribes the drug in capsules or in mixture (m iij for children, m v for adults, every two or three hours). He keeps up the action of the drug for three or four days after the disappearance of all symptoms.

Dr. John Crerar,[3] in writing of the treatment of influenza, expresses himself in the following terms: "Having regard to the essential state of a severe attack of influenza, I conceived that I would get the most effective antagonism in greatly increased alkalinity, and the **Bicarbonate of Potash** was the first agent that I thought of. This salt has many advantages. It is not unduly stable to make it difficult to break up in the system. It is also readily eliminated, and thus soon leaves the system, so that the danger of potash poisoning is reduced to infinitesimal proportions. Having found this salt to answer all my purposes, I have not looked for another, although, according to my theory, other remedies of a similar nature might easily give like results. I give liberal doses—30 grains—in a teacupful of milk every two or three hours. I add a few drops of the tincture of capsicum, but this is not at all essential.

"A word or two of caution: In two or three cases the action of the heart was weakened to an unpleasant degree; but digitalis and the aromatic spirit of ammonia quickly restored normality. Diarrhœa also sometimes supervenes, but is effectually met by Dover's powder. In cases where weakness was induced by previous disease, or where some other disease was a concomitant, or where pregnancy existed, the action of the remedy was somewhat retarded, but not rendered by any means less certain. Where the salt was intermitted too soon, the symptoms returned; but they readily gave way again on the resumption of the treatment."

Dr. F. T. Simson[4] speaks very highly of the use of **Carbolic Acid.** He says: "In severe cases I give the remedy every four hours, and for adults the formula is:—

℞ Acidi Carbolici Pur. Liquid. m ij | Tinc. Cardom. Comp. m x
Syrupi Simplicis m xl | Spiritus Chloroformi m x
Aquam Menth. Pip. ad ℥j

Sig.—To be given until the temperature is normal, and followed by bitter tonics."

He gives further excellent advice, which is certainly worth quoting. "I always insist on the importance of sleep. Sleeplessness is so uniformly present at first, and so exhausting to the patient, that I usually give 10 grains of Dover's powder the first night, which has the double effect of giving rest and causing the patient to perspire.

"To all but teetotalers I order stimulants, preferably good old brandy, with soda water, and dry champagne of good brand and age. I encourage the patient to eat in spite of his disinclination for food. Good beef-tea, fowls, pigeons, game, wild birds, and fish—especially oysters—I find valuable. I do all I can to keep the patient's strength to the maximum. It is of course necessary to keep the patient warm, and I advise bed in all but slight cases, with the temperature of the room kept between 60° and 65° F. When the cough is very troublesome and morphine not contraindicated, I find the following linctus very useful and pleasant :—

℞ Liq. Morphinæ Hydrochlor. ℥j	Chloroformi Pur. ♏ iij
Acidi Hydrobromic Dilut. ℥j	Tinc. Limonis ℥j
Syrupi Simp. ad ℥jss	

Sig.—℥j tussi urgente."

REFERENCES.—[1] "Therap. Gaz.," Feb. 15, 1892; [2] "Practitioner," March, 1892; "Brit. Med. Jour.," p. 171, Jan. 23, 1892; [3] "Lancet," Dec. 19, 1891; [4] "Brit. Med. Jour.," Jan. 23, 1892.

Synopsis.—(Vol. 1892, p. 295) Rest in bed, warmth, giving freely a fluid; nutritious and stimulating diet, with a definite quantity of **Wine** or **Brandy**. For the first few hours: **Sodium Salicylate**, 10 or 15 gr. doses, until pain departs; then give full doses of **Quinine** or **Cinchona**. For bronchitis, **Ammonium Carbonate** or **Liq. Ammoniæ Acetatis** may be combined; and for cardiac complications **Digitalis** or **Strychnine**. Eade recommends **Antipyrin**, 5 gr. doses, for the headache, and for bronchial irritation **Carbonate** or **Spirit of Ammonia**, with **Tincture of Bark**, and **Chloric**, or **Sulphuric Ether**, as required. **Champagne** or other **Wine**; external warmth, **Anodyne Embrocations**, and inhalations of **Carbolic Acid**, with **Conium**, have been useful, and after some days **Tincture of Iron**, with **Quinine**, and a **Mineral Acid**. Merama condemns the Sulphate of Quinine, and substitutes the **Valerianate** in 3 to 5 gr. doses. Wethered used **Quinine**, 2 gr. doses, thrice daily, dissolved in **Citric Acid**, and given in effervescence with **Sodium Carbonate**. Wilde regards **Tincture of Gelsemium** as a specific.

INSANITY.

Synopsis.—(Vol. 1892, p. 73.) Injections of **Brown-Sequard's Spermine** produced decidedly beneficial results in two cases out of sixteen experimented upon.

INSANITY (Toxic Origin of).

Græme M. Hammond, M.D., New York.

Modern research and clinical observation on the part of many specialists in nervous and mental diseases have established the fact

that a considerable percentage of all mental disorders can be said to have a toxic etiology.

Dr. T. H. Kellogg[1] in a paper read before the American Neurological Association, covers the ground very thoroughly. The toxic agent, says Dr. Kellogg, may be vegetable, animal, or mineral. It may be solid or gaseous. It may be generated as an organic virus in the bodies of others, or it may originate through metabolic tissue changes in the patient himself, as in the auto-intoxications. The poisonous substance may gain access to the system, through the alimentary canal, by the respiratory tract, or through the cutaneous surface, and it may act directly upon the cerebro-spinal centres, or through the sympathetic system, or through pathological changes which it produces in the blood or in the internal organs. Dr. Kellogg classifies the toxic origin of insanity into five divisions :

(1,) From mineral acids and certain drugs—Lead, mercury, arsenic, chloral, bromides, iodoform and paraldehyde.

(2,) From vegetable poisons—Opium, belladonna, cannabis indica, hyoscyamus, stramonium, tobacco, cocaine, cocoa, astragalus hornii, and secale cornutum.

(3,) From intoxicants and noxious gases—Alcohol, ether, chloroform, carbonic oxide, and sulphuric acid gases.

(4,) From eruptive fever, diathetic states, and other diseases—Typhoid fever, small pox, scarlet fever, intermittent fever, rheumatism, gout, lithæmia, puerperal state, la grippe, cancer, syphilis, and tuberculosis.

(5,) From auto-intoxications.

The action of these agents is often persistent, and continues long after the exposure.

REFERENCE.—[1] "Journ. Nerv. and Ment Dis.," Oct. 1892.

INSOMNIA.

Synopsis.—(Vol. 1892, pp. 30, 32, 48.) Leloup uses an infusion of **Catha Edulis** leaves, administered freely, instead of tea. **Chloralamide**, 2 to 3 gram. dose, in senile insomnia. **Gelsemium Tincture**, 10 to 15 drops, for nervous insomnia.

INTESTINAL SURGERY. *A. W. Mayo Robson, F.R.C.S.*

The surgery of the intestinal canal, although by no means perfected, is year by year making rapid progress, and last year's work is no mean contribution, as a reference to some of the published papers will prove.

In Billroth's[2] practice, eleven patients were treated by resections of the intestine, varying in length from half an inch to two and a half inches. Nine were cases of artificial anus ; one was carcinoma. All recovered.

The cæcum was resected twenty-four times. In eleven cases it was for carcinoma, with five successes and six failures. In thirteen cases it was resected for fæcal fistulæ resulting from chronic ulcerative perityphlitis—seven recovered, five were fatal. In one case the fistula reopened, but further operation was prevented on account of general tuberculosis.

Resection of the colon, varying in length from two to four inches, was performed in eight cases—four recovered, and four were fatal.

Resection of the rectum, with retention of the sphincter and its union with the gut, was performed seven times. All the patients recovered.

In analyzing the percentage deaths of these operations, it will be seen that in cases of cæcectomy, and colectomy, the rate was 50 per cent., while in enterectomy and excisions of the rectum all cases recovered.

The principle of intestinal anastomosis by means of decalcified bone plates, invented by Dr. Senn, is now recognized as a most valuable surgical procedure, and, besides others, cases have been reported by my colleagues, Mr. Ed. Atkinson, Mr. Littlewood, and by myself; but Dr. Abbe[14] does not attach much importance to the use of the plates, mentioning the accidents of leakage, suppuration, hæmorrhage, obstruction, and subsequent stenosis as having followed the use of Senn's plates and catgut rings. He advocates the use of sutures around a four-inch opening, and illustrates his paper by two cases where suturing led to absolute functional restoration. Dr. Klemm[22] has successfully employed turnip instead of bone for making these plates. I have successfully employed decalcified bone tubes shaped like a cotton bobbin in several cases of intestinal anastomosis and in resection of bowel.[4] The accompanying diagrams (*Figs.* 16, 17, 18 and 19) show the shape of the tubes, the use of which is thought to present the following advantages: (1,) Rapidity of execution; (2,) Simplicity and ease of performance, only two continuous sutures being required; (3,) Security against leakage; (4,) The certainty of an adequate and

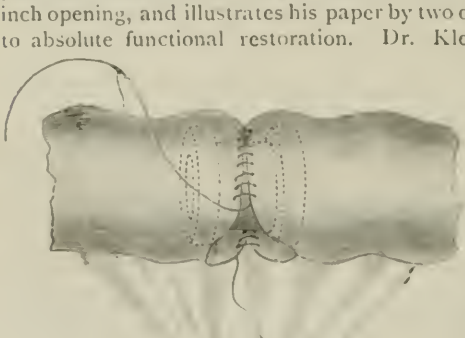

Fig. 16.

immediately patent opening; (5,) The avoidance of subsequent stenosis by securing continuity of mucous surfaces through the new channel; (6,) The adaptability of the principle to (*a*,) Lateral intestinal anastomosis; (*b*,) Lateral implantation as in ileo-colostomy; (*c*,) Gastro-enterostomy; (*d*,) Pylorectomy; (*e*,) End to end enterorrhaphy after enterectomy; and (*f*,) Cholecystenterostomy.

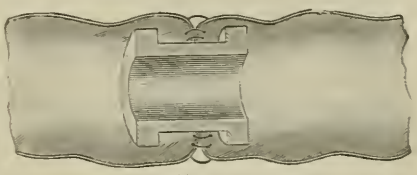

Fig. 17.

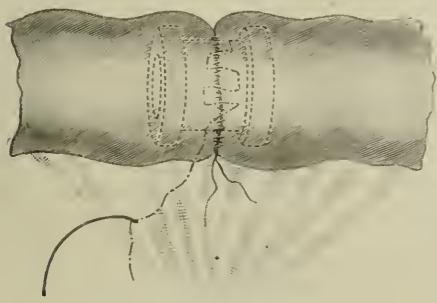

Fig. 18.

My colleague, Mr. Jessop, has also successfully used the bobbins in excision of the ascending colon for cancer.

In last year's "Annual," M. Paul's tubes[7] for enterorrhaphy after enterectomy were described.

Mr. Jessett[8] proposes a modification of the method by employing two tubes, one fitting into the other.

Dr. Morisani[11] has devised a method of suturing the intestine which promises to overcome the disadvantage of Lembert's suture, namely, of the rolling in of the line of sutures. He proceeds as follows: The entire mucous layer of the cut and flattened end of the intestine is so seized with a clamp that its entire circumference, after it has been slightly drawn out, may be clipped at one cut with the scissors. This is easily done if the small intestine be not dilated. If this be the case then a narrow ring of mucous membrane must be excised with the pincette and scissors. By this process one obtains a margin composed only of the serous and muscular layers, while the mucous stratum lies a few millimètres within the intestinal tube. The margins are then apposed; the needle is so introduced through the

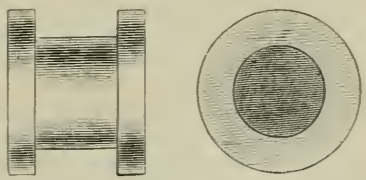

Fig. 19.

serous layer, that the puncture comes to lie two or three millimètres behind the line corresponding to the margins of the mucous layer. The needle then passes obliquely on through the muscular layer to penetrate the layers of the opposite tube in the contrary direction, viz., muscular and serous layer, and appear beyond the line of the mucous layer. Sutures are then introduced in the above way around the entire circumference of the intestine at a distance of three millimètres, one from the other. They are then tied. Care should be taken that the muscular layer lies against muscular layer and the sutures only be drawn tight enough to bring one mucous layer in contact with the other. Exact contact of the mucous margin sutures secures the sutures against infection. This single row of sutures is sufficient to closely coapt the margins; supplementary sutures in the serous coat are unnecessary, as the surfaces of the wound lie well and broadly against each other. The writer cites three cases of incarceration of the intestine treated by resection, which, as regards the intestine, had an uneventful course.

Dr. Maunsell's operation of enterectomy by invagination[13] has been resuggested by Mr. A. Barker,[25] and made the subject of experiment by Mr. Jessett.[26] The accompanying diagram (*Fig.* 20) serves to illustrate the method:

Fig. 20.

From this diagram it may be seen that the peritoneal surfaces are in accurate juxtaposition all round. While an assistant holds the ends of the temporary sutures, the surgeon passes a straight needle armed with stout horsehair through both sides of the bowel; the horsehair is then hooked up from the centre of the invaginated gut, divided, and tied on both sides. In this way twenty sutures can be placed rapidly in position with ten passages of the needle. The temporary sutures are now cut off short, the bowel pulled back, the longitudinal slit in the larger bowel closed with a continuous suture, and the mesentery brought together with four or five interrupted sutures.

McGraw[9] in describing two cases of resection of intestine for chronic obstruction, states that he prefers direct union by suture of the cut ends of the bowel in preference to Senn's method of establishing anastomosis by bone plates.

Mr. Greig Smith[17] in a thoroughly original paper read before the Royal Medical and Chirurgical Society, strongly advocated operative evacuation and drainage of intestinal contents in cases of obstruction of the bowels where distention is a marked feature. Mere over-distension of the intestinal walls is, it was pointed out, a potent factor

in the production of obstruction ; physical and physiological causes combine to render an over-distended gut incapable of passing onwards its contents. Therefore operative treatment of intestinal obstruction is not completed until this continuing cause is removed. According to the nature of the case, Mr. Greig Smith pointed out that the measures adopted should be one of the following : (1,) Simple evacuation of contents with immediate return of the gut ; (2,) Evacuation with drainage for several hours or days, and subsequent closure and return of the gut ; (3,) Evacuation with drainage that may be permanent. In operations, Mr. Greig Smith holds that while the stomach is distended with fluid, anæsthesia should never be carried out. Either the stomach should be artificially emptied, or the operation should be performed with the help of a local anæsthetic. Again, anæsthesia should be continued only for so long as is necessary to make the parietal incision and place the sutures. It must be clearly understood that the measures advocated are intended to supplement and complete the ordinary surgical methods for relief of the strangulation, and in no sense to replace these.

Mr. John W. Taylor[23] and M. Lucas-Championnière[5] advocate operation in post-operative intestinal obstruction. The former surgeon argues that the site and extent of the obstruction are the most important things to determine. If much bowel is involved in recent inflammatory disturbance and adhesions, enterotomy should be performed. If the extent of obstruction is small, limited to the site of the operation, and probably caused by recent adhesions to pedicles or other known sources of irritation, the abdomen should be promptly re-opened and the adhesions broken up. In this case the operation should be performed early, should be certain in its direction or aim, and deliberate in its execution. He reports three cases operated upon within three months. The first was a case of peritonitis, and enterotomy was performed six days after the removal of a tumour of the right ovary. The patient died exhausted on the twelfth day. The second was one of tubal pregnancy, when, thirty-six hours after the removal of the tube, secondary operation was successfully carried out. The third operation was done for inflammatory effusion and adhesions close to the abdominal incision, and was also successful.

The latter surgeon having successfully treated by second laparotomy six cases of post-operative strangulation of the intestine, believes that the success attendant upon this method of procedure justifies him in publishing his methods. He is a strong advocate of purgatives, not fearing even excessive use of drugs of this character, and he holds that the strongest testimony as to the value of this treatment is offered by his six successful cases.

In commenting upon these cases, the author holds that internal strangulation can be avoided, or, if not, at least the symptoms can be made evident so early that operation gives every prospect of success, provided the patient is actively purged on the day of an abdominal operation or the day following it.

Even when obstructive symptoms develop, an active purge can still be given, since it will shortly determine as to whether or not section should be performed. If it does no good, it will not materially complicate the operation, provided a free abdominal incision is made. As to the doctrine that forced purgatives act as excitants of peritonitis, clinical evidence is unanimously against this theory. Indeed, when peritonitis is started, purgatives are the only means which has the slightest effect in abating its violence.

Purgatives should be given after all abdominal operations, particularly after operations for intestinal strangulation. The most important point in the operative treatment of these cases is that the incision should be large. Attached loops of intestine must be freed by means of scissors. Purulent collections must be evacuated, and the cavities thoroughly cleaned out. In some cases, to gain sufficient room, two incisions are required,—one vertical and the other lateral. Opium should never be employed, except for the relief of severe pain.

Dr. Aufrecht[3] thinks the washing out of the stomach, recommended by Kussmaul, is a valuable addition to our therapeutic resources in the treatment of ileus. The first and more important indication for washing out the stomach is prominence of the organ itself when vomiting is not present or is suddenly arrested, —a circumstance which occurs in about a fifth of all the cases of ileus.

Another indication for washing out the stomach is stercoraceous vomiting. In such cases repeated washing out will remove the abnormal contents of the stomach and prevent them from doing further damage locally or by absorption. He also insists on the hypodermic administration of morphine in all cases of ileus. This treatment keeps the patient almost free from pain, which proves that peristaltic movements proceed quite normally. Dr. Aufrecht has also long since ceased to administer large enemata, which, in his opinion, could only be of any use during the first few days of the disease.

Volvulus. Braun[16] in discussing the treatment of volvulus, states that in seventeen cases in which, on abdominal section, untwisting was possible, six, or 35 per cent., recovered. The fatal cases were due mainly to collapse and peritonitis.

In two cases successfully treated by laparotomy and untwisting, the volvulus recurred some months later. Of four cases in which it was found impossible to untwist after the laparotomy, all died.

Of two cases treated by laparotomy and resection of the twist, one perished thirty-two days after operation, from perforating gastric ulcer, the other recovered. Eight cases treated by enterotomy died.

The author concludes his study of this subject by stating that early resort to operative procedures would save many of the cases that now perish because of valuable time lost in futile efforts at cure by other means.

This is shown by a case of my own of volvulus of the small intestine reduced successfully after laparotomy, aad reported in the "Brit. Med. Jour." for July 16th, 1892; and by a case reported by Dr. Nicolaysen in the "Brit. Med. Jour." for July 23rd, 1892.

Intussusception.—Mr. Hutchinson[27] says that the rule of practice in the early stages of intussusception ought to be invariably to try insufflation and injection, and it is only when they have failed that laparotomy ought to be thought of; they are not without risk, and must be tried with judgment and caution. There is no reason for preferring insufflation to the injection of water; for the latter he prefers hydrostatic pressure to the use of a syringe. In infants under two years of age laparotomy is so uniformly fatal that it should not be resorted to. Above that age, if injection has failed, a prompt resort to laparotomy should be recommended. It is desirable that this should be done early before the serous surfaces have become adherent. In the operation the chief difficulty is in releasing the incarcerated part. This is best done by pressure from below, not by traction from above. The older the patient the slower will be the progress of symptoms, and the longer the period during which it is possible to effect relief by operation. In adults a successful operation is possible even after a very long interval.

Before attempting inflation or injection, it is manifest that we should know as far as possible the best way of doing it, and what force may be used without danger. The experiments of Dr. J. D. Mortimer, chiefly made on children under two years of age, show that when the resultant pressure distending the colon is about 2½ lb. to the square inch (irrigator raised 5 ft.), there is apt to be cracking of peritoneum, which usually occurs on raising to 8 ft.; and that under a pressure corresponding to an elevation of only 6 ft. there may in some cases be complete rupture of the bowel.

Intestinal Obstruction due to Gall Stones.[19]—The subject is one of considerable importance, as will be gathered from the fact of over one hundred and ten cases being on record, and undoubtedly many cases occur without being recognized.

Intestinal obstruction dependent on gall stones may occur during a

severe attack of biliary colic, from paralysis due to intense nervous shock, or local peritonitis, or both; but although the vomiting may be severe and persistent, and the prostration so intense as to assume the form of collapse, obstruction seldom becomes complete, and usually resolves under treatment by morphia and restriction of diet.

The form of obstruction most commonly met with is a mechanical one, dependent on a large concretion which, having ulcerated its way from the gall bladder, gives rise to obstruction in its passage through the intestine.

A careful consideration of cases that I have seen, and of others that have been reported in the journals and elsewhere, leads me to say that as a rule it is impossible to diagnose obstruction from gall-stones with certainty from other conditions causing acute intestinal obstruction; therefore the surgeon should always bear gall-stones in mind when called upon to treat acute obstruction.

As jaundice is nearly always absent in these cases, I think it proves that these large concretions gain access to the bowel by a process of ulceration instead of in the ordinary way, through the bile ducts. I think it quite probable that the initial acute symptoms may be due to paralysis of the gut, owing to local peritonitis, although the later symptoms are undoubtedly due to the mechanical block caused by the concretion; but arguing from the history of the cases reported, and of those I have observed, it is usually impossible to make any distinction between the different stages of the affection, the patients being generally seized with pain and vomiting, and these being rapidly followed by persistent obstruction, until either the stone passes into the large intestine or gets pushed aside, ceasing to obstruct, or is removed surgically.

The case operated on successfully, and reported by myself,[19] illustrates the condition, as does also the case reported by Dr. Brocket in the "Lancet" for May 21st, 1892; and the one by Dr. Short in the "Brit. Med. Jour." for May 14th, 1892.

If laparotomy be performed, and the cause be discovered to be an impacted gall-stone, the obstruction may be removed either by needling the calculus through the walls of the bowel or otherwise crushing it, or by pushing it onward. This failing, the stone may be removed by enterotomy, the intestine being subsequently sutured.

If it were possible to be certain that a gall stone was the cause of the block, the expectant form of treatment would be fully justified, since the probability, arguing from published cases, is that the gall-stone would eventually pass; but accepting diagnostic difficulties, we cannot help feeling that if relief by medical means does not speedily

come, the surgeon is accepting a great responsibility in waiting for nature's cure.

Intestinal Obstruction from Meckel's Diverticulum.—Oderfeld,[30] in publishing the particulars of an operation for acute obstruction of the bowel, caused by the presence of Meckel's diverticulum, states that no case is known in which the cause of the obstruction was diagnosed before the operation. Two symptoms, however, possess a certain diagnostic value. When obstruction occurs in a patient suffering from hare lip or some other congenital deformity, the obstruction is probably due to the presence of Meckel's diverticulum. It is also important to have the history of the patient's early life. When an umbilical fistula has existed with fæcal discharge, which, however, has occasionally healed voluntarily, the same conclusion may be drawn.

Inguinal colotomy has, in the hands of most surgeons, replaced the lumbar operation. Mr. Allingham reports fifty cases,[2] and adheres to his method of performing a rather severe supplementary operation, in which opinion he is not supported by many other surgeons. I, for one, certainly prefer to avoid the supplementary procedure, and find that I can secure a good spur without it.

Mr. F. T. Paul has introduced the use of glass tubes.[29] The steps of this glass tube method, as at present practised, are: (1,) To make the incision and withdraw the bowel, as described by Mr. H. Allingham; (2,) To pack round the bowel with aseptic gauze, make a longitudinal opening on its convex border just large enough to admit the bent glass tube (*Fig.* 21) previously plugged with wool, and to insert this tube and securely fix it with a tight ligature; (3,) If deemed necessary to apply any of the further sutures employed by Mr. Allingham, and to dress the wound, covering the dressing with jaconet, through which the tube projects. When a great rush of motion is expected, it is simply caught in basins as it flows from the curved tube; but when the previous obstruction has not been severe, a jaconet bag containing wood-wool or other absorbent is tied on to the end to receive the discharge. The tube gives rise to no inconvenience, and always remains secure for three days.

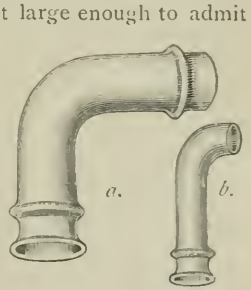

Fig. 21.

Intestinal Drainage Tubes *a*. For use in the cæcum, colon, and rectum; measures 5 inches in length by 1 inch in diameter. *b*. For use in small intestine; measures 2½ inches in length by ½ inch in diameter.

To serve the same end, I suggested the employment of a special trocar[1] which I have used with success on several occasions.

Primary Sarcoma of the Small Intestine.—Madelung[3] observes that primary sarcoma of the small intestine is a rare disease. He has had three cases of his own, and has collected eleven others. The sarcoma is generally small round-celled, but occasionally composed of spindle-shaped cells. They probably always commence in the submucous tissue, and thence extend to the neighbouring tissues. The muscular coats are next attacked, then the mucous membrane, rarely the serous coat, even in those cases which have terminated in death. These growths form aneurysmal dilatations of the affected parts of the intestine, and rarely, if ever, cause any contraction of the lumen. In some cases several distinct parts of the intestine may be simultaneously the seat of these tumours. In the advanced stage they may break through the serous coat and form large irregular cavities containing fæces and abscesses, which may have some resemblance to localized peritonitis. Secondary growths form very easily, especially in the lymphatic glands of the mesentery, in the omentum, liver, and kidneys. As regards the etiology of the disease little is known. One case was preceded by a contusion of the abdomen. The disease occurs most commonly during the third and fourth decades of life. The oldest patient was fifty-two, and the youngest four; all were males except one. The diagnosis of the disease is difficult. The existence of rapidly-growing tumours in the abdomen, which at first are freely movable, together with general emaciation and loss of strength in people who are not old, may point to the disease. Alternating constipation and diarrhœa generally occur. The duration of the disease is short, the greater number dying within nine months. One patient lived a year and nine months, whilst another died within two weeks. Madelung states that little can be done in the way of treatment, and that if a laparotomy has been performed to confirm the diagnosis, and a sarcomatous growth is found, it is best to close up the wound without proceeding further. Secondary growths occur at so early a stage in the disease as to put out of question the performance of resection of the affected part of the intestine. Madelung operated in two cases, resecting the bowel, but both died shortly afterwards. Nicolaysen and Mikulicz have each removed the growth in one case. One left the hospital in twenty-four days and the other in fifteen days, the operation wounds having healed. No further observations were made on these cases.

Perforating Ulcer of Duodenum.—Mr. C. B. Lockwood[4] has reported two cases in which laparotomy was performed for perforating ulcer of the duodenum; unfortunately both cases terminated fatally. There is always a difficulty in diagnosis in such cases.

The symptoms are those of acute intestinal obstruction, and often the absence of premonitory symptoms, the sudden onset, and the absence of any rise of temperature, leave few indications for a correct diagnosis. However, there are other signs worthy of being considered. It is a question whether the intestinal obstruction is ever complete, and there is usually some passage of flatus. Next, the vomit is sour or bilious in peritonitis, and does not become stercoraceous until many hours have elapsed; sometimes it is never quite stercoraceous. The pain, too, is often described by the patient as being of a burning character, and, if at first localized, soon becomes general throughout the abdomen; there is, as a rule, at this stage, pain on pressure in every region. The abdominal distension, too, is perfectly regular, and the percussion note is clear everywhere, both over the small intestines, over the cæcum, and along the course of the large intestines. There is one other sign upon which great stress ought to be laid. Unless the patient is stout, the coils of the distended intestines can usually be discerned through the abdominal wall. Now in mechanical obstruction these coils exhibit vigorous peristaltic movements until their muscular walls become exhausted; in peritonitis the peristaltic movements are abolished as soon as the inflammation is established. The negative aids to a differential diagnosis are also of importance.

Laparotomy for Perforation in Typhoid Fever.—Van Hook[33] is strongly in favour of laparotomy being performed for intestinal perforation in typhoid fever, and maintains that this should be done in all cases unless they are actually in a moribund condition. The diagnosis of intestinal perforation may be very easy or very difficult. There is usually sudden, violent pain, generally in the ileo-cæcal region, often coming on after some imprudence in diet, or violent peristalsis. There is also tenderness and absolute disappearance of liver dulness—a drawn, anxious face, covered with perspiration, together with other evidences of shock. Later, there is reaction, accompanied by all the symptoms of peritonitis. It is important to make a diagnosis before peritonitis has become violent and general, since every minute adds to the danger to life.

Three cases are recorded, one of which recovered. The operation has for its object three chief ends—closure of the perforation, cleansing of the peritoneum, and drainage. In seeking for the perforation the intestines must be handled most delicately, and the region of the ileo-cæcal valve should be first explored. When found, the perforation should be closed by means of a double row of Lembert's sutures. As a rule, only one perforation exists, and it is inadvisable to make a prolonged search for others.

The peritoneal cavity is now thoroughly cleansed with large quantities of hot water, which at the same time stimulates the patient and tends to remove shock. Finally, the omentum should be brought down over the coil of intestine, and stitched without tension to the mesentery. Drainage is best secured by means of a large glass tube passed to the lowest parts of the pelvis, and the discharge is drawn off by suction every half hour.

The paper ends with the following conclusions: (1,) There is no rational treatment for perforation in the course of typhoid fever, except laparotomy; (2,) The indication for laparotomy when perforation occurs in typhoid is imperative; (3,) The only contra-indication is a moribund condition of the patient; (4,) Collapse is often at least temporarily relievable by hot peritoneal flushing; (5,) The stage of the fever is not to be considered as an indication or as a contra-indication for laparotomy; (6,) The severity of the typhoid fever is alone not a contra-indication; (7,) Early laparotomy offers the most hope; (8,) The symptoms of peritonitis should not be awaited before operating; (9,) In taking charge of all typhoid fever patients, it is the physician's duty to be ready, in case of perforation, to perform laparotomy; (10,) The published statistics of laparotomy for this condition are strongly in favour of the operation; (11,) The technique, though not complicated, demands much thoughtfulness, acquired dexterity, great rapidity, and thoroughness.

The results of excision of cancer of the rectum in Czerny's practice have been analyzed by Schmidt.[34] Out of sixty-eight cases, in thirty-two the perineal method was performed, and in the remaining thirty-six cases the sacral method. In one case only was the perineal operation attended with a fatal result, whilst after the sacral method seven patients died from the immediate effects of surgical intervention. These tables show that in Czerny's practice the average duration of life after the perineal method is about two years. Of fourteen patients who were living at the time when these tables were being prepared, three were quite free from relapse after intervals of over five years. Of the fifteen patients who survived the sacral operation, six were free from relapse after intervals from the date of operation of more than two years.

Dr. J. C. Davie[35] has been able to excise the rectum very freely by dividing and turning backwards a portion of the sacrum. Mr. W. H. Brown[36] has also reported a case treated in a similar manner.

Mr. Maunsell has applied his method of enterectomy by invagination to excision of the rectum; and by means of an abdominal incision

and the use of an artificial diaphragm to keep the small intestines out of the pelvis, he is enabled to excise the disease very freely and effectually.

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IRIS (Prolapse of). *William Lang, F.R.C.S.*

Gama Pinto treats the prolapse as follows: After inserting the speculum, he introduces a smooth and very fine spatula between the borders of the ulcers and the prolapsed part of the iris, in order to break down the adhesions between the latter and the cornea. He then gently draws out the iris and removes it with one cut of the scissors. If one of the angles is still adherent, he endeavours to detach it by means of the spatula.

A piece of the ocular conjunctiva, a little smaller than the aperture in the cornea, is next cut off from any part behind the equator of the globe, and it is placed with its cutaneous surface downwards in the aperture and smoothed out. The eye is cleaned from blood, etc., the lids closed, and a dressing applied. The dressing is changed on the third or fourth day, and at the end of eight days it is entirely removed, when the anterior chamber is reformed and the small flap very vascular. In a few weeks the resulting scar is smooth, white, firm, and flat.

The object of the transplantation is not only to secure a rapid closure of the wound, but also to furnish material for the formation of a more solid and more resisting scar than would otherwise be obtained.

JAUNDICE (Obstructive). *Vaughan Harley, M.D., M.R.C.P.*

Pathology.—In a recent paper I have shown from demonstrable data, derived from experiments upon animals, the curious fact that the application of a ligature to the thoracic duct not only prevents the occurrence of the jaundice, which otherwise invariably follows upon complete occlusion of the common bile duct; but actually removes the jaundice which may have appeared from the common bile duct having been obstructed previous to the ligature being applied to the thoracic duct. I have also been able to conclusively demonstrate by experiment the cause of the—at first sight paradoxical—phenomenon, that the interruption of the flow of one kind of secretion, has the power of completely annihilating the pathological effects arising from the interruption of the flow of an entirely different kind of secretion in another duct, having neither (as was up till now supposed), any physiological, or anatomical connection with it whatever.

Hitherto we have not only been in error in thinking that the bile, pent up in the biliary appendages, when its outlet into the intestine is blocked up, is absorbed into the general circulation by the capillary blood vessels; but that the capillaries have anything whatever to do with the absorption of bile. For, on the contrary, I have found that the bile is solely taken up by the lymphatics, transported by them to

the thoracic duct, and carried by it into the general circulation, through the intermediary of the innominate veins.

There are several other new and equally important points in connection with the pathology of jaundice alluded to in the paper, which to be properly understood and appreciated, however, must be read *in extenso.*

The following are the general conclusions which have been reached :—

(1,) That, contrary to accepted pathological doctrine, the bile which is eliminated by the urine and deposited in the skin in cases of obstructive jaundice, does not find its way into the general circulation through being absorbed by the blood capillaries.

(2,) It is the lymphatic system of vessels alone which absorbs the biliary matters in obstructive jaundice, and it is through the instrumentality of the thoracic duct that they reach the general circulation.

(3,) After the thoracic duct has been ligatured for some days, supplementary ducts form by the coalescence of either entirely new or pre-existing small collateral lymphatics from the thoracic duct, at a point below the seat of ligature, through which its lymph stream passes vicariously into the right innominate vein.

(4,) That after the common bile duct is ligatured the whole of the constituents of the pent-up bile do not become equally concentrated, the less soluble, such as cholesterin and mucin, being by far the most concentrated.

(5,) From the dogs experimented on having in many cases not only lived but even gained in weight after bile was prevented from finding its way into the duodenum, it may be inferred that the admission of bile into the digestive canal is not absolutely essential to life.

(6,) That ligaturing the thoracic duct not only prevents the occurrence of obstructive jaundice, after the occlusion of the common bile duct in dogs, but checks it even after it has set in.

REFERENCE.—"Brit. Med. Jour.," Aug. 20, 1892.

Synopsis.—(Vol. 1892, p. 286.) **Pilocarpine,** ⅛ gr., once or twice daily, for about three weeks.

JOINTS (Diseases of). { *John Ridlon, M.D., Chicago.* / *Robert Jones, F.R.C.S., E.*

Atrophy in Joint Disease.—Dr. E. G. Brackett[1] considers the etiology under three heads: *(a,)* Bone destruction; *(b,)* Reflex nervous influence; *(c,)* The effect of immobilization. He contends that from the bony conformation much destruction could ensue at the hip with comparatively little shortening, and would be confined to a limited area of bone. His observations show that the shortening is

more often due to a uniform lack of growth of all the bones of the limb than to any considerable bone destruction, and that this is not determined by the suppurative process. He argues that were the atrophy due to reflex causes it ought to be slight when the disease becomes quiescent at an early stage, and that it ought chiefly to involve the neighbourhood of the joint, whereas it affects the whole member, and does not appear to be influenced by the severity of the symptoms. On the other hand his observations lead him to conclude that the amount of atrophy bears a direct relation to the amount of use to which the limb has been subjected, and that about the same degree is observed in those limbs restricted from use by other causes than joint disease.

The Antiseptic Closing of Long-standing Sinuses having their Origin in Tubercular Joints.—Dr. H. A. Wilson[2] advises the injection of the sinuses with a solution of pyoktanin for the purpose of staining the walls and rendering excision with the knife easy and certain.

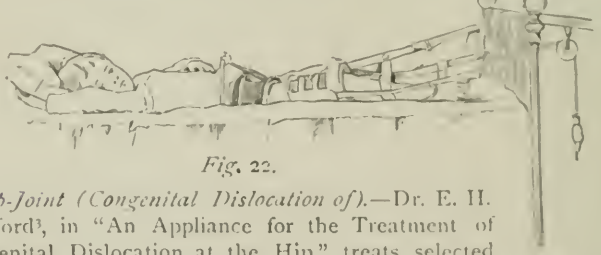


Fig. 22.

Hip-Joint (Congenital Dislocation of).—Dr. E. H. Bradford[3], in "An Appliance for the Treatment of Congenital Dislocation at the Hip," treats selected cases by weight and pulley traction (*Fig.* 22) for several months, until the head of the femur can be readily brought down to the acetabulum; then the patient is placed upon the back frame (*Fig.* 25), from which extend at right angles two arms somewhat longer than the thigh; the patient sits in a perineal sling, traction is made at right angles to the plane of the body and counter traction by a strap

Fig. 23.

This frame is placed upon the bed under the child. The bar for the perineal stick passes over the child. In the drawing the frame is represented as tipped upward (*Fig.* 24), and is reversed in position from what is shown in *Fig.* 23.

over the abdomen (*Fig.* 26). Later, the patient is suspended in a perineal sling so that he can touch his feet but bear no weight, and is allowed to walk backwards and forwards, the suspension apparatus running on a trolly. Still later, splints of aluminium, like those used in the convalescent stage of hip disease by the author, are used as a protection to the joint.

Fig. 24.—Bradford's Traction Appliance.

Dr. A. M. Phelps[4] reports two cases of dislocation upwards, and advocates for the treatment of all cases of congenital displacement at this joint his traction hip splint, in which the traction bar is at the outer side of the leg ; to this is added a pad moved by a set screw to make pressure laterally against the greater trochanter of the displaced femur, and a metal band with a broad downward flange shaped to fit the patient on the opposite side to make counter pressure, the aim of the whole device being to make longitudinal traction and lateral pressure. The patient uses a high shoe on the normal limb, and axillary crutches.

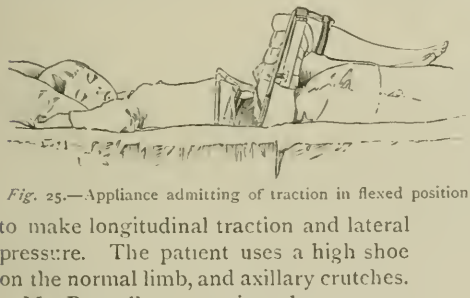


Fig. 25.—Appliance admitting of traction in flexed position.

Mr. Barwell communicated a paper on the "Operative Treatment of Congenital Dislocation of the Hip." The condition thus called was, as many anatomical investigations had shown, absence, more or less complete, of the acetabulum, usually combined with a certain truncation of the head of the femur. The well-known signs of the deformity were merely mentioned, and a symptom not hitherto noticed was described and illustrated by a sketch rapidly taken from a patient, namely, when she bowed forwards with straight knees until the back of the pelvis was nearly horizontal with the great trochanters (or the trochanter in unilateral

Fig. 26.—Appliance to exercise traction of femur while patient sits.

cases) ; it projected upwards and outwards from the ossa innominata, and lay in some cases actually higher than those bones. Stress also was laid on a jolt which occurred when the limb was drawn down far enough to bring the head of the bone into its normal situation. Two prevalent methods of treatment were described: the one by division of the rotators and capsular muscles, originating with M. Guerin, and recommended by Mr. Broadhurst ; the other by long-continued recumbency with extension, inaugurated by M. Pravaz, followed in America by Dr. Buckminster Brown, and in England by Mr. Adams. According to the last-named the recumbency must occupy two or two years and a half, and be followed by a year and a half of instrumental treatment and of go-cart and crutches. It must begin, in order to have chance of success, in infancy, or very little beyond that period. The writer stated that this deterrent period of treatment might be very much shortened, the chances of success greatly increased, and cases seen at a later age might be cured by the division of certain muscles. But he contended that the rotator and capsular muscles were valuable aids in keeping the head of the femur *in situ*, and must be left intact ; while the muscles which ran from the pelvis to the femur, in a direction almost parallel to the axis of the latter bone, being those which, in the absence of an acetabulum, propelled its head upward on to the dorsum ilii, were those which should be divided. Indeed, the extension which Pravaz and his followers carried out for such lengthened periods could only avail by counteracting this action of those muscles, which might be much more surely, rapidly, and as safely overcome by division. Three cases were given, the oldest beginning treatment at eleven years of age, in which the author divided the adductors, etc., and allowed the patients to get up in a few weeks, and which were completely successful. A letter from the first patient was given, describing her activity and power. The author showed one of the younger patients.

Hip-Joint (Disease of).—Dr. L. A. Sayre brings forward some statistics with two objects in view : first to show that patients with hip disease may recover with useful, movable joints, in spite of the fact that they may be of tubercular families, and to prove that absolute immobilization during the entire progress of the disease is not essential to perfect recovery ; and second, that prolonged immobilization may produce anchylosis not only in diseased but also in healthy joints. In view of the statistics furnished, it would seem that the first point is made.

During the thirty years, 1859 to 1889, Dr. Sayre treated four

hundred and seven cases of morbus coxarius, exclusive of exsections. The results were as follows:—

Cured, motion perfect		71
„ „ good		142
„ „ limited		83
„ „ anchylosed		5
Unknown		78
Under treatment		14
Abandoned treatment		3
Discharged		2
Died of exhaustion	2	
„ „ phthisis	1	
„ „ pneumonia	1	
„ „ tubercular meningitis	5	
	—	9
	Total	407

Comment upon such statistics as these is unnecessary beyond calling attention to the fact that out of four hundred and seven patients only nine died from any cause. The second point is less well taken; one case only is reported, and this has been referred to in former writings. A boy had some inflammation at one hip, the pathology of which is not given, which resulted in deformity; the deformity was corrected by division of the soft parts done by Dr. Louis Bauer, and the patient put in a wire cuirass. Some months later when the cuirass was removed, anchylosis was found to be present in all the joints of both lower extremities and the spine. Upon this and this alone is based the assumption that the prolonged immobilization caused the anchylosis.

Statistics of Operations upon Tuberculous Hip-Joints.—Dr. Charles T. Poore reports upon sixty-seven cases of tuberculous disease of the hip joint, being all of the cases operated upon at St. Mary's Hospital from 1873 to 1892. Sixty-five joints were excised; in five erasion was performed; in eight cases the trochanter major was trephined; and in eleven cases the central cavity of the femur was cleaned out. Thirty-two were discharged cured, twenty-five died, three discharged relieved, two discharged not improved, and four in the hospital.

Dr. A. M. Phelps[5] made the following confession of faith: (1,) I believe that muscular spasm is always present in morbus coxarius; (2,) That that spasm of the muscles produces great intra-articular

pressure; (3,) That the articular pressure produced by the spasm of the muscle is a very serious element in producing the destructive changes that are so frequently and so generally seen in joints untreated or badly managed; and (4,) That, so far as possible, absolute immobilization of an inflamed joint, until it is perfectly cured, should be insisted upon, and that voluntary or passive motion should be most emphatically prohibited.

From his experiments on dogs, he further believes that immobilizing a joint in such a manner as to produce and continue intra-articular pressure will result in destruction of the head of the bone and socket against which it presses.

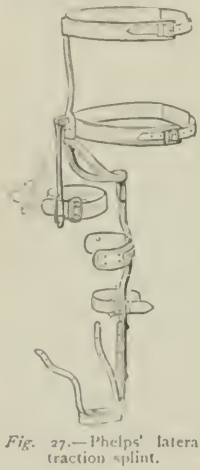


Fig. 27.—Phelps' lateral traction splint.

From these propositions, which it is not necessary to separately call into question, but which taken together we think may be questioned, Dr. Phelps evolved the principles of his treatment, and devised his hip splint (*Fig.* 27), which he believes combines all the essential elements of the Thomas hip splint and of the American traction splints with lateral traction added. That Dr. Phelps obtains excellent results from the use of this splint there can be no doubt, but there may be a question whether these results are due to traction *per se*, or to the lateral traction, or to immobilization.

The first four propositions which Dr. Phelps adduces are applied to a human joint suffering from chronic disease; the last is applied to a canine healthy joint in which artificial intra-articular pressure was made by the hand of the experimenter and maintained by fixed dressing.

If, for the sake of argument, we were to admit that the findings in the case of the dog were facts—that the small spot of congestion on the dog's femur would ultimately have resulted in destruction of bone—they would have no necessary application to a tubercular human joint, which untreated is not subjected to prolonged artificial intra-articular pressure and immobilization, nor is it subjected to such pressure when treated by a simple immobilizing apparatus, such as the Thomas hip splint.

That intra-articular pressure is present during the period of intense muscular spasm is admitted, but as in the case of the dog the indications for checking the injury were to cut off the plaster splint, not to pull on the leg longitudinally and laterally, so in the tubercular human

joint, the problem is to quiet the involuntary muscular spasm in the most rapid and complete manner possible, and no facts have yet been advanced to indicate that this can best be done by traction in any direction.

Uninterrupted, inelastic, longitudinal traction has long been recognized as an efficient means for immobilization during the period of recumbency, and has been called "fixative traction," but Dr. Phelps does not use his hip splint during the time when he keeps his patients in bed; it is only after the deformity has been corrected and the active stage well passed that he applies the splint. When used as a walking splint (*Figs.* 28, 29) it has no advantage over the other forms of the long traction splint with thoracic attachment, except its greater rigidity; and it has the same defects that we have frequently pointed out in long traction hip splints, namely, it gives intermittent traction when walked upon.

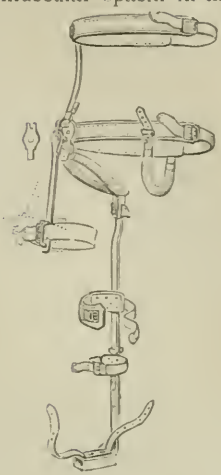


Fig. 23.—Phelps' lateral traction splint.

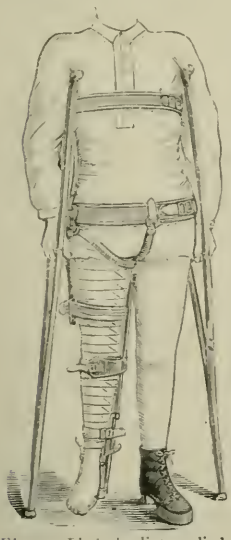


Fig 29.—I helps' splint applied.

As to the lateral traction, Dr. Phelps no longer contends that he is entitled to the sole credit of it (he having published prior to Blanchard, of Chicago, who used it in 1872), because it is now known to have been taught in Europe earlier than 1860. That lateral traction added to longitudinal traction and immobilization relieves pain and quiets muscular spasm in certain cases will be admitted, but that it does this by pulling the head of the femur directly outward from its bearings in the acetabulum has not been demonstrated, and the illustrations accompanying Dr. Phelps' writings would indicate quite the opposite. The traction is made by passing a band around the thigh at its upper third. At this point the shaft of the femur lies about at the junction of the middle and outer thirds of the transverse plane, and pulling outwardly against the muscles to the inner side of the shaft can only press the

head of the femur more firmly into the acetabulum, if it affects at all the intra-articular pressure. Diagrammatically the action may be illustrated as in *Figs.* 30 and 31.

Fig. 30.

Fig. 31.

(*a*,) The femur; (*b*,) A portion of the pelvis; (*c*,) The muscles to the inner side of the thigh; (*d*,) The direction of the lateral traction force. (*Fig.* 30,) Normal relations; (*Fig.* 31,) Force applied, muscles pulled outward and femur forced upward.

Whether this force be exerted by a weight, the patient being recumbent, or by a lever, as in the splint, if exerted to but a slight degree it can have no effect in pulling the head of the femur from the acetabulum, but may in certain cases steady the limb and oppose muscular tremor; if exerted vigorously, as we believe it never is, it could only act mischievously.

The splint is a combination of the thoracic attachment of the ordinary long traction hip splint (presented at the meeting of the American Orthopædic Association in September, 1887, by Dr. Ridlon), of the hip band of the ordinary hip splint, of the thigh ring of the Thomas knee splint, and of the ordinary extension bar applied to the inner side of the leg. To all this is added a lateral traction lever operated by a key from its attachment at the hip band. The splint immobilizes more effectively than any of the other traction hip splints, but it lacks the antero-posterior leverage action which is the characteristic feature of the Thomas hip splint, and without which motion at the hip joint can not be perfectly controlled. Moreover, it can not be used to correct an existing deformity as can the Thomas splint and the other traction splints, but must be withheld until the deformity has been reduced by other means. As compared with other hip splints it is difficult of adjustment, and expensive.

The splint, like many a complex prescription, attempts to do so many things that it is well-nigh impossible to surmise which of the various therapeutic agents act, or, if it may not be that nature works a miracle while the doctor speculates upon the effects of his remedies, and congratulates himself upon results not of his invoking.

Reflexes in Hip Disease. Dr. E. G. Brackett[6] examined forty-seven cases of hip disease, and compared them with twenty-one cases of spinal caries. In the hip cases the reflexes were uniformly increased, and in the majority of cases unequally in the two extremities, while in the spinal cases the reflexes were equal in all cases, and rarely increased.

Is amputation ever indicated in Coxitis?—Dr. Herman Mynter (Buffalo) asks this question. In some of his earlier resections for neglected cases he found a chronic osteomyelitis and osteitis extending all the way down the shaft of the femur to the lower epiphysis. The periosteum was found thickened, swollen, and so easily loosened from the congested and osteoporotic bone, that the whole shaft could be forced out of the wound, leaving the periosteum intact like the finger of a glove. Necessarily, we should in such a case find continued suppuration and recurrence, or, rather, continuation of the carious process, unless we removed the whole diseased shaft, in which case, if we succeeded in healing the wound, a useless flail-joint would result.

To make a resection and leave the diseased bone behind was useless, and to remove the whole diseased shaft produced a useless limb.

Amputation has so far been the only resource, and the various text-books on surgery recommend this proceeding under the circumstances mentioned. Dr. Mynter attempts to overcome the difficulty by a less severe operation.

The first case was that of a girl, aged eleven, with six years history of disease. At the time of operation her left leg was abducted, flexed, rotated outward, with marked lordosis and crepitus in joint.

The joint was resected by posterior incision, the bone being cut through above the trochanter minor. The head was found loose in the joint, the synovial membrane of which was tuberculous, and was removed. The whole neck and trochanter were in a state of chronic osteitis, no particular primary lesion being found. A chronic osteo-myelitis was found extending down through the shaft to the lower epiphysis, the cavity being found filled with tuberculous masses, softened bone and fluid fat. The periosteum was swollen, thickened, and could with ease be detached from the dark red congested bone. He decided to treat this complication in the same way as he would treat an acute osteo-myelitis, and therefore removed the whole marrow and all the softened bone with a long sharp spoon, made thereafter with chisel a counter-opening into the cavity of the femur above the external condyle near the epiphyseal line, brought a strong piece of silk thread through by the aid of a long probe, and after a thorough disinfection of the cavity with corrosive sublimate, introduced by means of the silk thread a long *mèche* of iodoform-gauze through the whole femoral canal and out through the resection wound. The acetabulum was thereafter plugged with iodoform gauze, the wound partly sutured and an antiseptic dressing and Volkmann's sliding splint with a weight

of five pounds applied. The wounds were dressed under narcosis every sixth day for four weeks, a new *mèche* of iodoform gauze being introduced each time by being attached to the old one before it was removed. As the wound then looked perfectly healthy, it was omitted and the wound then closed rapidly. The extension was discontinued on April 15th, a plaster case applied on May 4th, and on May 10th she left the hospital on crutches, in excellent health, having gained twelve pounds in weight. The shortening was one inch, the joint firm and freely movable, all wounds healed. She had not used the limb at the time of publication.

The second case was treated by Dr. Mynter much in the same way. The operation is similar to that advocated by Dr. Poore.

Fig. 32.

The ordinary form of splint, with shoulder strap applied, and without fixative traction.

Fractures of the Neck of the Femur.—Dr. Ridlon reports upon twelve cases treated by himself, Dr. Williford and Mr. Robert Jones, and strongly advocates the Thomas splint in cases of fracture of the neck of the femur (*Fig.* 32). The results in all of them were good, and the patients' ages respectively were, seventy-four, seventy, sixty-five, seventy-four, sixty-nine, sixty-seven, sixty, seventy, seventy-two, eighty, sixty-five, and forty-three. In all cases fair motion was restored to the joint, and tenderness was overcome; in some, motion was almost perfect, and in no case was the shortening more than an inch. Dr. Ridlon, in commenting upon the cases, states that if one were only to consider the cases he reports, fracture of the neck of the femur would seem no more serious than fracture at any other part of the bony skeleton. As a matter of fact, however, when treated by the usual methods it becomes a very serious matter indeed.

Cruveillhur, Colles, Lonsdale and Cooper denied the possibility of bony union in intra-capsular fracture. Of the sixty cases collected by R. W. Smith, half died within the first eight weeks, and in all that lived, the functions of the limb were permanently impaired. The treatment now most in use is by weight and pulley and the long wooden side splint, with the foot of the bed somewhat raised. The amount of weight used varies with the fancy of the surgeon, from very little to fifteen or twenty pounds; one of the latest writers, Stephen Smith, commences with from one to four pounds, and increases accord-

ing to the indications. To the side splint some add a perineal band to prevent the patient from slipping down in bed, the splint being long enough to rest against the foot of the bed-frame. Or the perineal band may be used as a means for counter-traction, opposed to traction made by an elastic strap or tube, fastened to the outer surface of the splint, and acting through a cord passing over a pulley at the end of the splint to the stirrup. The disadvantages in this plan of treatment are, that there are no indications for traction in impacted fractures, indeed, traction for any other purpose than for anchoring the foot to the bed is positively contra-indicated ; that traction by weight and pulley, or by the elastic tube, is acting constantly and uninterruptedly, whether the patient be asleep or awake, and in an unimpacted fracture there is no guarantee that the fragments may not be separated to too great an extent for advantageous union. Only the constant attention on the part of the surgeon and the constant application of the tape measure during the early period of treatment give any assurance that too great lengthening or unnecessary shortening has not taken place, and even under constant supervision there is no guarantee that the same relative relations are maintained between the fragments during sleeping and waking. The most serious objection, however, is that the long side splint only immobilizes laterally to any considerable extent, whereas the chief tendency to motion is antero-posteriorly : especially is this so in nursing the patient. It is not necessary to dwell upon the fact, which we all know but too well, that it is quite impossible to adjust the bed-pan without inducing a certain degree of antero-posterior motion.

Remembering that most of our patients are helpless and fat old women, it is not surprising that sound union so rarely occurs when in the treatment there is a lack of direct fixation, a lack of fixative traction, and only the ever-changing surface of the bed upon which to rest the fractured part--it is rather more surprising that union occurs at all ; that union does at times take place would seem to indicate a very strong tendency to repair if the broken bone could have but a fair chance.

A very decided advance would seem to have been made in the recommendation of the plaster of Paris splint, applied to one, or preferably, both limbs from the feet upwards and extending to the axilla. But a moment's consideration will show that the advantage is chiefly theoretical, and counterbalanced by equally serious disadvantages. A fat old woman cannot be placed in the position for the application of plaster of Paris from foot to axilla without the risk of breaking up any impaction that may be present, or moving one frag-

ment upon the other to an injurious extent in unimpacted cases, nor can the splint be applied without the help of a very considerable number of trained assistants, nor can it be done in most cases without an anæsthetic—an objectionable feature in the aged; nor is it usually accomplished without the limb being left somewhat flexed in the permanent dressing. In women, the plaster splint is with difficulty kept free from urine; hidden points of irritation are complained of, and cannot be ignored without the risk of a pressure-sore, and the splint cannot be removed and another re-applied without more or less serious harm to the fractured part. Outside of hospital practice the plaster splint can have no permanent place in the treatment of these cases. We have mostly to treat elderly women who are more often stout than otherwise, and it becomes very important that means should be used which least hamper them, and that we refrain as much as possible from all purposeless restraint. In the Thomas hip-splint we have an apparatus which secures posterior support to the fracture, gives fixation without compression of the fractured region except posteriorly, allows the patient to be lifted with ease, does not interfere with the groin, favours cleanliness, admits fixative traction, can be applied without moving the patient and without assistance, and presents no difficulties after the initial application.

The splint is made of soft iron, and consists of a main stem, a chest band, a thigh band, and a calf band. The stem is an inch and a quarter wide and one-fourth inch thick, and in length reaches from the axilla to the calf of the leg, the length of the lower portion from the hip joint to the calf of the leg being equal to that from the axilla to the hip joint. In the part opposite the buttock two gentle bends are made, the lower somewhat backward, and the upper upward, so that the body and leg portions of the splint follow parallel lines from one-half to one inch apart, the body portion being posterior to the leg portion. The stouter the patient the more nearly do these parallel lines coincide, and in some cases the main stem may be left entirely straight. To the lower end is fastened by one rivet the calf band, one-sixteenth by five-eighths inch, and in length an inch or two less than the circumference of the leg at this point. The thigh-band is one-sixteenth by three-fourths inch, and in length an inch or two less than the circumference of the thigh at its largest part; it is riveted to the main stem just below the lower bend, so that when applied to the patient it comes well up to the perineum. The chest band is three thirty-seconds by one and one-fourth inch, and in length nearly equal to the circumference of the chest, being relatively longer than the other bands. It is fastened by one rivet after the upper end of the

stem has been forged flat and bent back over it. This arrangement makes a fast joint, and brings the stem between the chest band and the skin. In each end of the chest band a round hole is forged of at least one-half inch diameter. The splint is now bent to approximately fit the patient, padded on the side which is to come next the skin with a quarter-inch thickness of felt, care being taken to leave no inequalities of surface, and then covered with basil leather put on wet and tightly drawn, so that when dry it will have shrunk sufficiently to prevent the cover from slipping on the iron. The splint is applied by opening out the wings of the bands looking to the uninjured side of the patient and then slipping them, followed by the stem underneath the patient from the injured side; the wings, which were straightened, are bent again by hand and readily return to their former curves. A closer and more accurate adjustment of the wings may be made by the use of the wrenches; these will be found especially serviceable in fitting the chest band and in drawing in the other bands when the patient is very intolerant of any threatened movement or jarring. When it is possible it is better to fit the splint to the patient before she has been moved from the spot where she has fallen. The splint having been fitted, if retentive traction is not required, the limb is bandaged to the stem from the calf to the upper part of the thigh, rolling the bandage in the direction the opposite of the rotary deformity which may be present; then shoulder straps are applied by taking a couple of yards of broad bandage, or a strip of muslin, looping it around the stem where it joins the chest band, thence over the band and up over the shoulders and down to the ends of the chest band, where it is passed through the holes and tied, and then passed across the intervening space to the opposite hole and again tied. If retentive traction is desired, the shoulder straps are omitted: in a thin patient the limb, after having been pulled down in the splint, can be secured by a figure-of-eight bandage fastened to the splint with a large pin passed through it and the covering at the back of the splint, but in a stout person this will rarely hold, the splint slipping down or the limb riding up; then we apply a broad strip of adhesive plaster to each side of the limb from the upper part of the thigh, turning the lower ends outward and upward around the wings of the calf band, where they are fastened by a strip of plaster passed entirely around the limb. The whole is then covered with a bandage as in the first instance. By this arrangement the limb is pulled upon only to the extent of correcting the actual shortening, and is held at one and the same length sleeping or waking, whether the muscles relax or are spasmodically contracted. The device aims to prevent motion in the axis of the limb; to prevent

lateral motion in any direction ; to do this without constricting the region of the fracture and to enable the patient to have the bed-pan adjusted without pain and without disturbing the relation of the parts. When the splint has been applied and the patient is in bed, the nurse should be instructed in certain manœuvres ; the bed-pan is adjusted by passing an arm under both limbs at or below the knees and then lifting directly upwards, making an incline of the whole patient below the chest band. By this manœuvre it is also more easy to smooth out wrinkles in the bedding and change the sheets in the usual way. The skin pressed upon by the stem should be changed night and morning by pulling it slightly first to one side and then to the other, and the patient should be inspected daily for pressure-sores, by turning her on the sound side. To turn a patient upon the sound side, support the fractured limb at the knee with one hand, and grasping the chest band with the other, the patient is readily turned as a whole. The points most likely to suffer from pressure are those at the junction of the thigh band and stem, the lower bend of the stem, and the junction of the stem and chest band. Points pressed upon should be lightly dressed with balsam of Peru and protected from further pressure by padding above and below the point. If the pressure of the whole body portion of the stem is complained of, a small thin mattress of hair or a sheet folded to several thicknesses may be placed between the splint and the patient's back. Threatened hypostatic congestion is obviated by raising the head of the bed from one to three feet, and the patient is prevented from slipping down by tying the splint to the head of the bed.

Fig. 33.

The ordinary form of double splint. Fixative traction applied and shoulder strap omitted.

In all cases obviously unimpacted, and wherever the shortening is more than three-quarters of an inch, fixative traction should be applied. All patients that are exceedingly feeble had best be placed upon the double splint (*Fig.* 33). In all cases the splint should be kept on for from six to eight weeks after all pain has ceased ; then the patient should remain in bed for four weeks longer without any treatment whatever, unless there be some positive indication to the contrary, in which case the splint is cut off at the

knee and the calf band riveted at this point, and the patient may then be permitted to go about with crutches (*Fig.* 34). During the early period of treatment the diet should be restricted and regulated with the idea of avoiding a movement of the bowels for as long a time as possible. No cathartic should be given, for the bowels will surely move spontaneously by the end of the third week; after this the diet need not be restricted.

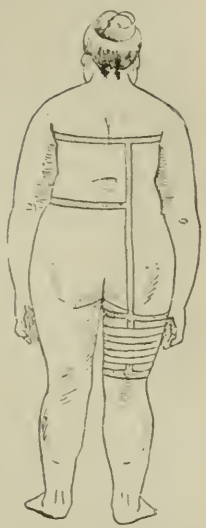


Fig. 34.

The short, or walking, splint with abduction wing.

Thomas held the following to be the essentials of treatment: (1,) To uninterruptedly and as effectually as possible arrest flexion at the hip joint; (2.) To continue the treatment until the symptoms of genuine repair and soundness of the joint are diagnosed; (3.) To obtain the best possible restoration circumstances permit, so that no lameness attributable to flexion be a permanent reminder of treatment.

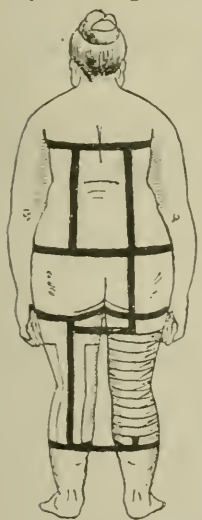


Fig. 35.

The modified double splint. Fracture of the neck of the left femur with too great tenderness at point of fracture to admit of any direct pressure. Section of main-stem omitted. Shows on left leg the manner of applying adhesive plaster for fixative traction.

And he quite agrees with Stimson that the principal aim of treatment should be to keep the inflammatory reaction within the narrowest limits, and to secure union at the earliest possible moment, even if in a faulty position; that the first consideration is to keep the patient alive, the second to obtain good union, the third to get union in a good position.

Disability, due solely to a shortened limb, should not be classed as a bad result, inasmuch as such disability may result from an impacted fracture—the profession being unanimous in holding that the intentional breaking up of an impacted fracture is unjustifiable; but disability due to a sensitive and painful joint, and to flexion which almost invariably accompanies such a condition, is curable, and should not, as it often is, be mistaken for delayed or non-union. Sound union in good position may still leave the patient

for a time with a painful and useless limb, while entire absence of bony union may leave a painless and useful limb though still withal a short one.

There is a class of cases called by Thomas, "Simulated fracture of the neck of the femur," which may be referred to here. The patient suffers an injury to the region of the hip joint; no evidence of fracture can be made out at the time, but after the lapse of some days or weeks many of the signs of fracture may be found; apparent shortening, eversion and deformity, evident by the flexion test. These differ in no manner from the signs of simple inflamed hip joint, and can be diagnosed as not a fracture of the neck of the femur by the surgeon placing simultaneously the palms of his hands upon the patient's trochanters; when he will notice that in fractures the trochanter of the defective limb is slightly or distinctly prominent, and sometimes higher than that of the sound side; this differential diagnosis is not of much practical value, as the details of treatment are nearly alike, whether there be fracture or not; in these cases the fixative traction is not usually applied.

REFERENCES.—[1] "Boston Med. and Surg. Jour.," Dec. 10, 1891; [2] "Atalanta Med. and Surg. Jour.," Jan., 1892; [3] "Trans. Amer. Orth. Ass.," vol. iv., 1891; [4] "Boston Med. and Surg. Jour.," Jan. 28, 1892; [5] "Med. News," Dec. 26, 1891; [6] "Boston Med. and Surg. Jour.," March 31, 1892.

F. S. Eve, F.R.C.S.

Dr. N. Senn[1] contributes a valuable paper on "The Treatment of Tuberculosis of Bones and Joints by Parenchymatous and Intra-articular Injections."

He observes that "It is reasonable to assume that if by a harmless procedure safe and efficient chemical substances that exercise a direct curative effect can be brought in contact with the affected tissues within diseased bones and joints it would constitute a decided improvement over former methods of treatment by internal administration or external application of the same remedies. The remedies which have been used for this purpose possess potent antiseptic and stimulating properties, and have been employed with a view to destroy the microbic cause of the disease, and to aid and expedite the process of repair."

"The first attempts at intra-articular medication were made with a Pravaz syringe, the solution being thrown into the joint without previous evacuation of its fluid contents. At the present time the joint is punctured with a larger instrument, and if it contains fluid this is evacuated before the injection is made. If the joint contains tubercular pus, the intra-articular injection is preceded by irrigation

of the joint with a mild antiseptic solution. The best instrument for puncturing a joint is a small trocar, through the cannula of which the joint can be emptied, irrigated and injected. The puncture is to be made under strictest antiseptic precautions, and in accordance with the rules laid down elsewhere. In tubercular empyema of a joint, irrigation should never be neglected as a preliminary step to the intra-articular injection. The simplest method of irrigating a joint is to connect the cannula with a rubber tube attached to an irrigator holding the antiseptic solution. A 2 per cent. solution of **Boracic Acid** or a one-third or 1 per cent. solution of **Salicylic Acid** in sterilized water should be used for this purpose. The connection between cannula and rubber tube should only be made after the surgeon has been satisfied that neither of them contains atmospheric air. By elevating the irrigator the fluid enters the joint, and the infusion should be continued until the capsule is thoroughly distended, when the rubber tube is detached and the fluid evacuated through the cannula by compressing the joint. This procedure is repeated until the fluid returns perfectly clear. The intra-articular injection is made with an ordinary one ounce glass syringe, to the nozzle of which a piece of aseptic rubber tubing is attached, which is fastened to the end of the cannula with the same care as in making the irrigation. The quantity of fluid which is to be injected should never be large enough to cause painful distension. After the cannula is withdrawn the puncture should be sealed with a pledget of aseptic cotton and collodium."

Among the many substances which have been used for parenchymatous and intra-articular medication, he mentions such as have received the most attention, and which experience has shown to be of some value, viz. :—Tincture of iodine, carbolic acid, arsenious acid, corrosive sublimate, phosphate of lime, chloride of zinc, balsam of Peru, camphorated naphthol, and finally iodoform.

Injections of **Iodoform** in the treatment of tuberculosis of bones and joints, and tubercular abscesses, were advised by Billroth and Mikulicz ten years ago, and the latter published another paper on this subject a year later, but it was not until a few years later still that it came into more general use through the teachings and writings of Mosetig v. Moorhof.

Whatever formula for the solution is selected, not more than ½ a drachm of the iodoform should be injected the first time, and in children even less. If this dose does not produce any unpleasant symptoms, it may be increased the next time the operation is repeated. If used in this manner the risk of iodoform intoxication appears to be

nil, or at least very remote, as not a single instance was observed in one hundred and eight cases treated in the Tubingen clinic by Bruns. The best results with iodoform injections came from the Halle and Tubingen clinics. This is undoubtedly owing to the fact that in these institutions this treatment has been very extensively used, and the large experience thus gained has enabled the surgeons to make a proper selection of cases, and apply the treatment in the most efficient manner.

Bruns asserts that the anti-tubercular action of iodoform has been demonstrated. In order, however, for this drug to exert its specific action it is necessary that the whole interior surface of a joint or tubercular abscess should be acted upon, and the action should be uninterrupted, and continued for a long time. The curative effect often only becomes apparent after three or four months, but from this time the abscess gradually disappears. Of one hundred cases of tubercular abscess treated in his clinic during the last five years, 80 per cent. were cured, and during four years fifty cases of joint tuberculosis were also cured. He uses now a 10 to 20 per cent. mixture of iodoform in pure glycerine or olive oil, prepared fresh and thoroughly sterilized before each injection.

In the case of fungous joints he makes the injection not only into the cavity of the joint, but also into the thickened capsule, making the puncture at different points, and injecting from 2 to 6 cm. of the mixture. In tubercular hydrops and tubercular abscess the fluid or softened contents are first removed, whereupon 10 to 30 cm. of the mixture are injected.

Neither pain nor symptoms of local irritation follow the procedure, but the temperature usually shows a rise from 1 to 2°, which, however, disappears after a few days. He does not immobilize the injected joints. He has never met with cases of iodoform intoxication from the injections. Parenchymatous injections are to be repeated every eight days, intra-articular injections every two to four weeks. Symptoms of improvement seldom appeared before the expiration of six to eight weeks, although the pain diminished at an earlier date.

Shrinking of the fungous capsule is the surest indication of beginning improvement. In children suffering from tuberculosis of joints the functional result is frequently perfect if the treatment is begun before the disease has resulted in extensive destruction of the soft structures of the joint. In adults the best results often consist in a useful but partially or completely anchylosed limb.

Immediate and Remote Dangers Attending Iodoform Injections.—The dangers attending the treatment of tubercular affections of bones

and joints by iodoform injections may arise from iodoform intoxication, the action of the menstruum employed, secondary infection, and injury of important parts by the instrument used in making the puncture.

The dangers just enumerated do not belong to injections of iodoform held in suspension in glycerine or olive oil. Accidental infection, which has occasionally occurred during or after the injection, is, of course, caused by a faulty antisepsis, and has happened from the use of iodoform for parenchymatous and intra-articular injections irrespective of the menstruum used. If such an accident takes place, it will become necessary to make a puncture with a large trocar and evacuate the pus through the cannula, and resort at once to irrigation with a 3 per cent. solution of boracic acid ; or treatment by incision and drainage may be required.

Indications.—The treatment is most useful if the joint is distended with fluid, as under such circumstances, after the removal of the fluid the iodoform can be brought in contact with the entire surface of the cavity. This is often impossible if portions of the joint have been shut out by intra-articular adhesions. Irrigation of the joint should never be omitted if it contains pus, flakes of lymph, or detached broken down fragments of tubercular tissue, and it is in such cases that the cannula of even a large trocar is often not of sufficient size to evacuate the joint or abscess properly, and that the puncture has to be followed by an incision large enough to meet the requirements.

If the joint contains no fluid it is difficult and usually impossible to reach all of the infected tissues by an intra-articular injection, and it is in such cases that it must be combined with parenchymatous injections, and the site of puncture changed at each operation. As no fluid is to be removed, and no irrigation to be made under such circumstances, the necessary amount of iodoform emulsion is thrown into the joint and into the thickened fungous capsule with an ordinary Pravaz syringe, supplied with a large needle. The puncture is made at different points every time the procedure is repeated. It cannot be expected that a cure can be effected by this method of treatment if the primary focus contains large masses of cheesy material, or a sequestrum of considerable size. But even in such cases, if the injections are made with the requisite degree of care, the treatment is harmless, and results in great benefit in preparing the parts for subsequent surgical treatment by operation.

Points to be Remembered in Making Intra-Articular and Parenchymatous Injections.—The strictest antiseptic precautions must be practised in making the injections. The cardinal rule in all opera-

tions should be to select the shortest route from the surface into the different joints, and at a point where no important structures will come into the line of the proposed puncture. In injecting a tubercular abscess the puncture should not be made where the abscess wall is thinnest, but some distance from the most prominent point of the swelling, so that the puncture will be made through healthy skin, and not through tissues reduced in vitality from the long continued pressure from beneath. Before the puncture is made, the skin is drawn to one side, so that after the removal of the cannula the puncture in the deep tissues may be subcutaneous.

The ethereal solution of iodoform should never be employed, as its use is attended by greater immediate and remote risks than if the iodoform is used in suspension in a non-volatile menstruum.

The best method of using the iodoform is a 10 per cent. mixture in glycerine or olive oil. The quantity of the mixture to be injected must vary somewhat according to the age of the patient and the size of the tubercular focus. From 3 drachms to 1 ounce is the average dose.

In making parenchymatous injections the needle should be inserted in different directions without removing it completely, and the injection made at as many points as possible in order to saturate as large a territory as possible of the infected tissues. If the procedure is to be repeated the second puncture is made some distance from the first so as to medicate a new area of tubercular tissue.

After the cannula is withdrawn the puncture in the skin should be carefully sealed with a pledget of aseptic cotton and iodoform collodium. Mechanical diffusion of the injected material should be secured after the injection by kneading, compressing, and rubbing the parts, and by making passive motion. The injection is not to be repeated oftener than every eight days to two weeks, and the treatment continued until the tubercular material has been removed and healing by cicatrization is in progress.

In the treatment of tubercular joints by iodoform injections, immobilization is only necessary if active motion of the joint is productive of great pain. In tubercular spondylitis with abscess, the iodoform treatment should be combined with the necessary orthopædic treatment. In tuberculosis of bones and joints, with a large caseous mass or a sequestrum of considerable size at the primary focus, the iodoform treatment cannot take the place of mechanical removal of the infected and dead tissue, but is often of great value as a preliminary measure to prepare the way for a radical operation.

Drobnik* advocates free exposure of the interior of the tuberculous cavity, and long-continued plugging with iodoform gauze as an

efficient method of treatment in cases of tuberculosis of the knee, in which both arthrectomy and resection are contra-indicated, and no alternative remains save amputation of the limb. The author holds that in all cases of tuberculous disease, amenable to surgical treatment, the seat of the disease should be freely exposed and kept open, in order to enable the organism to reject the tissues already destroyed or undergoing necrosis.

REFERENCES—[1] Senn, "Annals of Surgery," Jan., 1892 ; [2] Drobnik, "British Med. Jour.," Jan. 30, 1892.

KELOID.

Synopsis.—(Vol. 1892, p. 308.) Leloiv and Vidal advise **Multiple Scarifications**, dressing with **Boric Acid**, and next day applying **Mercurial Plaster**, and repeating the scarifications. Plicque alternates **Scarification** and **Electrolysis**, treating malaria, scrofula, or lithæmia, that may exist.

KERATITIS (Interstitial). *William Lang, F.R.C.S.*

Aristol is recommended by Dr. James Wallace to be dusted into the eye in the third stage of this disease, in order to clear up the corneal opacities left by the inflammation.

The present writer has not tried this remedy, being very satisfied in most cases with the hot bathing, followed by massage with some ointment. He directs the patient to bathe the eye for five minutes with a **Boric Acid** lotion, which must be as hot as can be borne. This is followed by the insertion of a piece of yellow **Oxide of Mercury** ointment, and the lids are then rubbed over the cornea for two minutes. It is well to insist that the time should be measured by a watch.

Synopsis.—(Vol. 1892, p. 244,) Biber advises a prolonged course of **Massage**, with **Yellow Ointment**, for bullous keratitis. For purulent keratitis, **Benzo-phenoid** solution (p. 22).

KIDNEY (Diseases of). *Robert Saundby, M.D., F.R.C.P.*

Cystic Kidneys.—Ewald has recorded the case of a woman, aged sixty, who died a few days after complaining of some dyspeptic symptoms, but who presented nothing to suggest kidney disease. At the *post mortem* examination both kidneys were found to be only slightly enlarged, but entirely converted into cysts containing fluid and stones ; the nucleus of one of the latter was found to be pure uric acid. He thinks such cases can only be diagnosed when the kidneys form tumours which can be felt, or suspected when albuminuria persists for years without any severe nephritic phenomena. He believes that the cystic degeneration arose in consequence of the presence of urinary calculi in the tubules. (As a rule the urine is

abundant, of low sp. gr., containing a little albumen and a few casts, while the diagnosis depends on the discovery by palpation of large sponge-like tumours occupying the hypochondria. – Rep.)

KIDNEY (Fugitive). *[Wm. J. Smyly, M.D., F.R.C.P. [John H. Glenn, M.D., B.Ch.*

Dr. Schatz, of Rostock, lately read a paper before the German Gynæcological Society on wandering abdominal organs, under which he included not only kidneys and spleen, but also the liver and stomach. He urged that the treatment must not restrict itself simply to raising again the partly or wholly descended organs. It is necessary to again enlarge the dome of the diaphragm, or, what is the same thing, to bring the thorax permanently more into the position of inspiration. Gymnastic exercise can effect this generally, but imperfectly. Rest in bed, which at once causes the position of inspiration of the thorax, and therefore draws up the wandering organs, usually acts insufficiently and temporarily, even if long continued and supported by milk diet. Rest in bed, however, shows us by its marked effect on the reposition of the organs what we have to do in the erect position. We need but support the abdomen in such a way that the thorax assumes the position of inspiration corresponding to that in the recumbent position. The enlargement of the dome of the diaphragm then at once draws up the organs, as in the recumbent position. For this, support of the abdomen binders are less appropriate, because they press also in a frontal direction in a useless manner, and because they lift too little in a vertical direction. Besides, they easily slide upward. To attach to the binder so-called kidney pads, which are sometimes seen, is altogether senseless, because, when compression is universal, local pressure cannot act upon the kidneys without causing great inconvenience. If it is intended to act upon one kidney alone, a corresponding pad, the size of the palm of the hand, must be kept pressing on the place of the reposited kidney without any other constricting bandage, in a way resembling the English rupture truss, by a strong spring reaching over from the healthy side. The author has seen such pads worn with advantage as long as ten years in cases of enterostenosis. For the most common cases the best effect is attained by keeping a transverse oval, concave, abdominal shield (between symphysis and navel) appressed by being joined to a sacral pad with two springs passing loosely around the pelvis. For proper selection we need not only a large number of abdominal shields and sacral pads, but also a large assortment of springs of varying length and power. The latter must range between two and

twelve, and even sixteen pounds, which had best be divided between the two springs. The increased pressure in the abdomen by springs of sixteen pounds' tension amounted in one case to only two centimètres of water pressure, and still the kidneys, stomach, and liver were kept well in place, proving how little the intra-abdominal pressure has to do with the wandering of the organs. Stitching up the kidneys is to be rejected, with rare exceptions. It removes at best but a symptom of a general disease, is prone to relapse when the causes persist, and, when the latter are overcome, is superfluous. In one case, in which both kidneys had been stitched up by a surgeon and kept their places, the symptoms had remained unchanged. They disappeared at once on wearing the abdominal shield, because thereby all the wandering organs, and not the kidneys alone, were withdrawn into the dome of the diaphragm. The author has tried the method so thoroughly that he can recommend it in full confidence. But it should by no means be relegated to the truss maker.

KIDNEY (Surgery of). *E. Hurry Fenwick, F.R.C.S.*

A series of interesting experiments have been performed on dogs by Dr. Schachner,[1] of Louisville, with a view of elucidating some problems in the technique of the treatment of injuries and diseases of the kidney.

The methods adopted in this research are too numerous to reproduce here, but the following conclusions arrived at by Dr. Schachner are worth recording: (1,) The disproportion which frequently exists between the cause and the effect of injuries of the kidney can alone be explained upon its peculiar anatomical structure, its physiological function, and the frequency with which this organ is found in a more or less abnormal condition at the time of the accident; (2.) The external damage offers no safe criterion as to the extent of the internal injury: (3,) In all operative attacks upon the kidney, the capsule and perirenal structure should be preserved as carefully as possible, since these not only add to the strength of the purchase of sutures, but afford additional protection against hæmorrhage and sepsis: (4.) A gunshot injury, amounting to a simple perforation, is best controlled by the application of a "purse-string suture" to both orifices; (5,) This may be reinforced by a covering of perirenal structure drawn together in a similar manner; (6,) The hæmorrhage from superficial lacerating wounds of the kidney can confidently be arrested in the majority of instances by means of a single or double purse-string suture, applied one c.m. or more from its edge; (7,) The great omentum can frequently be employed as a valuable adjuvant in controlling the hæmorrhage, and in adding to the safety in many operations upon

this organ ; (8,) Incised wounds whose aseptic nature is questionable, are best treated by tampon and drainage through the loin ; (9,) Wounds of the pelvis should be closed with a double row of sutures, as an additional measure against the formation of a fistula ; (10,) Unless the wound of the ureter is singularly slight as compared with the size of the duct, nephrectomy is, as a rule, indicated as the most practical step ; (11,) The incision in partial resection for the relief of an injury should be made distant from the contused region to insure the apposition of two healthy renal surfaces.

Nephrolithotomy and Nephrorrhaphy.—Schachner asserts (1,) Where the operation is of the character of a nephrotomy, dependent upon some cystic or suppurative process, the lumbar is the preferable incision ; (2,) Whenever the lumbar incision becomes insufficient, the space can be enlarged by another incision in a horizontal manner after the method of König, or as recommended by Newman ; (3,) Unless specially contraindicated by reason of sepsis, or other valid causes, the abdominal incision should be preferred ; (4,) Procrastination means untold suffering to the individual, and the steady increase of the dangers militating against the ultimate success of the operation ; (5,) The renal artery can safely and successfully be compressed, rendering not only the operative field bloodless, but adding to the thoroughness of the operation and the chances of its success ; (6,) The closure of the wound, unless contraindicated by drainage, should be preceded by a careful irrigation of the pelvis, and a thorough removal of all blood clots ; (7,) Whenever practicable, an incision through the kidney substance should be given the preference over one performed through its pelvis ; (8,) The bottom of a renal incision should be approximated by means of deep sutures, while the superficial edges are united by a separate row of superficial stitches ; (9,) If the kidney has been much disturbed it should be stitched *in situ* (Jacobson) ; (10,) In anchoring a floating kidney, it should be replaced as nearly as possible in its natural location.

Nephrorrhaphy.—Mr. Lane[2] narrated a new method of nephrorrhaphy before the Clinical Society. He exposed fully the posterior surface of the kidney, and split the capsule into ten triangles by means of incisions radiating from the centre, the bases of the triangles being at the margin of the kidney. Every particle of fat and transversalis fascia, etc., was removed. Each triangle of capsule was reflected and twisted up, and to each was attached a twisted silk ligature. These ligatures were passed through the cut surface of the abdominal muscles in such a manner that the posterior surface of the kidney, freed of its capsule, was retained immovable in immediate contact

with the recently-cut surface of muscle by means of its capsule, which was anchored firmly by its ten attachments. Rapid recovery resulted. Twelve months after, whilst lifting a heavy box, she had a return of pain, so that she dreaded the further development. The kidney was again exposed in the loin, when it was found to be embedded in a dense fibrous material, which connected it intimately to the cicatrix in the abdominal wall.

Rotch[3] records a case of double nephrorrhaphy at an interval of one month between the operations. Each kidney was fastened to the quadratus muscle by three stitches through the capsule. There was some suppuration on the right side from a ligature, which was removed. Five months after the first operation both kidneys were found fixed in the lumbar region.

Anuria following Nephrectomy (Treatment of).—Willy Meyer[4] reports a case of nephrotomy for the relief of sudden suppression of urine occurring thirty-eight days after nephrectomy for pyonephrosis. "At the second operation the remaining kidney, which was on the left side, was exposed by the lumbar incision. The organ was not enlarged, but of a purplish red colour and much congested. The pelvis and renal tissue were explored with a needle at several points, but no concretion could be felt. After enlargement of the wound the ureter was opened, emptied of a mass of pus, shreddy material, and coagulated blood, and repeatedly washed out with a warm boric solution which was forcibly injected with a hand syringe. The renal pelvis, which also contained similar material, was cleared by gentle irrigation. The wound was loosely filled with iodoform gauze, the incision in the pelvis of the kidney and the ureter being left open. The kidney at once resumed its work. The patient had a relapse four weeks after the operation, and for the next two months all the urine was discharged through the lumbar fistula. Subsequently there was a free discharge by the bladder, and the opening in the loin closed completely. After an interval of about eleven months the patient was in good health and passing daily a normal amount of clear urine. Meyer has drawn the following conclusions from his study of this and the few previously recorded cases of total suppression of urine after nephrectomy: (1,) Before nephrectomy cystoscopy should, if possible, be performed in order to prove the presence of a working opposite kidney; (2,) If the cystoscope has demonstrated the presence of a working opposite kidney, and if then absolute anuria suddenly sets in some time after nephrectomy and a period of uninterrupted recovery with the secretion of a satisfactory amount of urine, the cause must be a mechanical one. Nephrotomy on the opposite side is then indicated

as the only means of saving life; (3.) Immediately after nephrectomy there is, in all probability, an acute hyperæmia of the opposite kidney. This hyperæmia frequently occurs in the female, especially in the left kidney, at the time of the menstrual period, but probably to a much less extent; (4.) Such hyperæmia may suddenly aggravate an incipient or hitherto entirely latent disease in the remaining kidney. It may even cause the perforation into the renal pelvis of an abscess previously encapsuled in one of the pyramids; (5.) Such an aggravation of disease in the remaining kidney may be repeated at a number of menstruations, but is, in the majority of cases, of a passing, not of a permanent, character. After such attacks the remaining kidney often shows an improved condition.

Renal Calculus.—The most important contribution to the year's literature of this section is undoubtedly to be found in three lectures upon the Surgery of the Kidney, by Mr. Henry Morris.[5] An experience of twenty-eight cases, in which renal calculus was suspected, but in which none could be discovered on exploration, is recorded. The method of exploration adopted in each case was very thorough. "The kidney is turned out on to the surface of the loin, and examined with the eye, as well as with the finger and thumb, the needle and the trocar. The convex border is incised, and the finger introduced into the pelvis. With the finger within and the thumb on the surface every portion of the substance is squeezed, in order to detect any undue hardness or softness, resistance or flaccidity of the organ. The renal pelvis and upper part of the ureter in this way are also thoroughly examined. When no stone has been found, the cut surfaces of the kidney are sutured with catgut, passed through the substance from front to back, before returning the kidney into the abdomen. In this way hæmorrhage is checked, and the wound in the parietes of the loin can be got to heal by first intention without the necessity of draining." In twenty-seven of the cases the lumbar incision was employed, and in one the Langenbuch anterior incision was preferred. Mr. Morris does not consider that pain is often, as a persistent feature, transferred from an affected to an unaffected kidney. He has known no single instance of it in his own practice.

In considering the twenty-eight cases, the following groups were adopted: (1.) Tuberculous nephritis and pyelonephritis, two cases; (2.) Abscess of the kidney, five cases, all males. Three were tuberculous, one occurred after stricture, and one after gout; (3.) The effects of former perinephritis caused by sprains or injuries to the back, four cases; (4.) Movable kidney; (5.) Abscess of prostate;

(6,) Calculus of prostate ; (7,) Calculus in the lower end of the ureter ; (8,) The effects of a stone which has passed along the ureter ; (9,) Renal calculus simulated by disease in the neighbouring organs, such as the cæcum and stomach ; (10,) Spinal disease, which has caused perinephric suppuration ; (11,) Undetected renal calculus ; (12,) No sufficient cause discovered.

An analysis of the cases shows that in twenty some morbid condition of the kidney or the perinephric tissue was found. In another case nothing was discovered at the first exploration, but a stone was present, and was subsequently removed with the kidney. In the twenty-second case the stone was not found, though it is no doubt there, and, considering the present state of the patient, ought to be again searched for now that the method of search is so much more perfect. In six cases nothing abnormal was found in the kidney or its surroundings, but in two of them organic disease affected the prostate and other parts of the lower urinary apparatus. In one the symptoms were excited by a gastric ulcer, and in the other three no explanation of their symptoms is afforded by anything at present known about the patients.

In three of the cases in which some pathological condition was found, there was grave disease in other organs as well. In one a movable kidney probably caused the whole of the symptoms ; in another the mobility of the kidney explained only part of the symptoms, the rest being caused by a calculus lower down. In fourteen of the cases complete cure followed the operation ; and in another, life was prolonged for nearly three years, and great relief from suffering secured by the operation.

The following hints are valuable :—

If immediately after nephrectomy a large quantity of urine of low specific gravity is secreted by the remaining kidney, its soundness may be suspected.

In suspected renal calculus, one of the errors of diagnosis to be borne in mind is the possibility of the symptoms being caused by ulcer of the cæcum, duodenum, or stomach, or by some other form of intestinal affection.

An occasional difficulty must occur in detecting a stone in the prostate, even with one index-finger in the prostatic urethra, and the other in the rectum.

In all cases of renal calculus, the least doubtful, it should be a rule to examine the prostate and vesiculæ seminales per rectum, and to sound the bladder. While exploring for stone in the bladder on those occasions, Mr. Morris pushes his left index-finger as far as he can into

the rectum, to drag downwards and forwards the trigone of the bladder, so that the ureteral orifices may come well within the play of the beak of the sound.

Nephrotomy for Calculous Pyelitis, with disease of the opposite Kidney.—Professor Keen[6] reports a very instructive case of calculous pyelitis in a young woman, aged thirty-one. As the urine was found to have a small urea percentage, nephrectomy was decided against, and nephrotomy was performed. The kidney was found to be greatly dilated, and the renal mouth of the ureter was seen by means of electric light to be blocked by two small calculi. As they could not be dislodged without free hæmorrhage, and as the patient had been greatly weakened by previous suffering, the calculi were left *in situ*, and the sac stitched to the skin. The remarkable part of the case is, this apparently destroyed and almost useless kidney secreted four and a-half times as much urine as the other kidney. The patient died probably from hæmorrhage, thirty-six days after the operation. Unfortunately no autopsy was obtained. Professor Keen considers that no nephrectomy ought to be undertaken unless the percentage and the total amount of urea have been determined. If this percentage be below 2 per cent., nephrectomy should not be done until the kidneys have been stimulated to do their work, so that they eliminate at least this percentage of urea.

Mr. Howard Marsh[7] relates the following very important case:—A female, aged twenty-five, with symptoms of left renal calculus, had the left kidney removed in June, 1886. It was found mobile, atrophied, and it contained three small calculi, which could have been passed by the natural route. The patient made a good recovery, and was discharged in September, 1886. A month later, and again in December, the patient was readmitted with a pain in the right kidney. In the latter month there was typical renal colic, with almost total suppression of urine. In January, 1887, the right kidney was explored, but nothing was discovered. The symptoms subsided, and the patient went on well until December, 1889. During this time, however, she had occasional attacks of pain, hæmaturia and partial suppression of urine, and in January, 1890, she was admitted again after one of unusual severity. For some days after this she had partial suppression of urine, and occasional attacks of severe suffering; and these recurred at intervals until July, when the kidney was again exposed by an incision through the right linea semilunaris. The kidney seemed healthy and moderately hypertrophied; there was no dilatation of the ureter. Matters then went on as before with occasional attacks, until on February 14th, 1891, the kidney was again explored,

and the ureter was opened two inches below the pelvis of the kidney, and a long probe passed down it. No obstruction, however, was found. The substance of the kidney was then incised, so that the pelvis and calices could be explored with the finger, but still nothing was found. The patient gradually sank and died on the 17th. *Post-mortem:* An opening was found in the cæcum, due to ulceration of the vermiform appendix. The right ureter was a little dilated, and bound down by fibrous bands to the cæcum. The right kidney was large and pale, but otherwise normal. The mischief in the appendix had probably occurred in the previous November, when there were symptoms of perityphlitis.

Movable Kidney.—Mr. Lucas, in the course of some remarks made in July, 1891, before the British Medical Association, points out the relation of movable kidney to hydronephrosis, and is of the opinion that the latter condition may be caused by the pressure of pent up urine in the pelvis and calices. He further reports cases where nephrorrhaphy has been eminently successful in early hydronephrosis due to movable kidney.

Owing to the mobility of the organ, due to the length of the pedicle, a thorough examination of it can be made, as, if necessary, it may be slipped through the wound.

The conclusions he draws are: (1,) Movable kidney is a condition which often leads to hydronephrosis, owing to the twisting of the pedicle, or pressure of the organ upon its duct; (2,) To avoid such danger, and to relieve the patient from pain, all such cases should be treated by nephrorrhaphy, which is a simple and safe operation; (3,) Even when hydronephrosis has already advanced, cases, in which the hydronephrosis is clearly due to the mobility of the organ, may be cured by nephrorrhaphy, and the remains of the organ saved from further degeneration.

Tumour of Kidney.—Mr. Edmunds[8] describes a cystic adenoma of kidney, the product of a nephrectomy in a girl, aged eighteen. On examining the kidney after removal, there was found projecting on its anterior surface a globular tumour; on section, this was seen to be two and a-half inches in diameter, and to project internally into one of the calices. The mass, which was enclosed in a distinct capsule, was found to consist entirely of cysts of various size, the largest being one inch across. These cysts contained a thin colourless fluid, and, on microscopic examination, they were found to be lined with epithelium, at places cubical, at others columnar. The remainder of the kidney was healthy, and no doubt working up to the time of operation.

REFERENCES. — Schachner, "Annals of Surgery," Feb., 1892; [2]Lane, "Chir. Society Trans.," 1892; "Brit. Med. Jour.," April 16, 1892; [3]Rotch, "Boston Med. Jour.," May 26, 1892; [4]Meyer, "Annals of Surgery," April, 1892; "Brit. Med. Jour.," April 28, 1892; [5]Morris, "Brit. Med. Jour.," May, 1892; [6]Keen, "Therap. Gaz.," Jan., 1892; [7]Howard Marsh, "Brit. Med. Jour.," 1892, pt. i., p. 712; [8]Edmunds, "Brit., Med. Jour.," April 9, 1892.

KNEE-JERK (Localization of).

Græme M. Hammond, M.D., New York.

Shirrington has ascertained that the knee-jerk reflex depends upon the integrity of the vastus internus, and. perhaps, the subcrureus, and on the branches of the anterior crural nerve which supply these muscles as well as the nerve itself. He found that, in the monkey, all of the lumbo-sacral nerve roots, except the fifth, could be severed without interfering with the knee-jerk, but if the fifth root only was cut the knee-jerk was immediately abolished. In man, the fourth root corresponds to the fifth in the monkey. It made no difference whether the anterior root or the posterior root was cut. In either case the knee-jerk was immediately abolished.

REFERENCE.—"Journ. Nerv. and Ment. Dis.," Sept. 1892.

LABOUR.

(Wm. J. Smyly, M.D., F.R.C.P.
(John H. Glenn, M.D., B. Ch.

Prof. Max Runge[1] in an article upon the treatment of lingering labour, distinguishes between (1,) Primary; (2,) Secondary cases. Primary cases are those in which the pains are weak from the beginning. This occurs in asthenic individuals and in over-distension of the uterus, as in cases of hydramnios, twins, etc.

Secondary cases are those in which there are good and energetic contractions in the beginning of labour, but which subsequently grow weaker and even cease. This is due to obstruction from a large head, narrow pelvis, rigid soft parts, etc.

In the primary form, constitutional treatment during pregnancy is an important prophylactic.

During labour the bladder and rectum should be emptied and the lying-in chamber supplied with pure air.

For slow dilatation of the os and weakness of the uterine musculature, hot vaginal douches of carbolized water, 1—15 per cent., repeated every two hours, are necessary. If these fail, baths and large doses of narcotics are indicated.

In abnormal distension of the uterus, it is advisable to puncture the membranes carefully when the os is half dilated, so as to avoid prolapse of the cord; but as this procedure is not without danger, it should, if possible, be avoided.

Treatment of secondary inertia must be more energetic, stimulants, (and where the sensibility is great), **Opiates** and **Chloroform,** being indicated. Where the pains become spasmodic, give **Chloral Hydrate,** gr. 30 or ʒj per rectum. **Morphine** hypodermically, gr. $\frac{1}{4}$—$\frac{1}{3}$, or inhalation of chloroform, is also indicated. Warm baths from forty-five minutes' duration are very efficacious.

Massaging the uterus is useful only before the passage of the head over the perineum or during the third stage of labour.

He condemns the use of ergot during the first and second stages of labour, but emphasizes its use during the placental period, and highly recommends **Cornutin** (Kobert's).

He leaves undecided the question whether strychnia is, or is not, an oxytocic.

In the "Wiener med. Blätter" Pawlik describes a very useful addition to our methods of diagnosing the position and presentation of the fœtus by abdominal palpation, which we have ourselves employed with advantage in cases where the head has not entered the pelvic cavity. Sitting by the patient's side with the face turned towards hers, the hand is placed above the pubes with the thumb and fingers spread asunder as far as possible. Then gradually approximating the thumb and fingers, the lower uterine segment is grasped along with its contents. Thus it can be easily determined whether the fœtus present vertically, obliquely, or transversely. By a slight up and down movement the presence or absence of the groove of the neck is made out, and distinguishes a head from a breech. This groove runs obliquely downwards from the chin towards the occiput and thus indicates the position. By a gentle side to side motion it is further possible to decide whether the head is fixed in—or moveable above—the brim.

REFERENCE.—"Therap. Monats.," Heft. iv.

Synopsis.—(Vol. 1892, p. 312.) Bousquet used **Cocaine,** 5 % solution, or 4 % ointment, as an analgesic, successfully. N.B.—The patients under its influence must not sit up, and, in marked anæmic cases, it is dangerous. Tarnier uses **Sulphate of Copper,** 5 % solution, to wash out vagina and uterus after labour.

LACHRYMAL OBSTRUCTION. *William Lang, F.R.C.S.*

It is in the early stage of these cases that the greatest good can be done, and in the shortest time. As each month passes after an epiphora is established, without efficient treatment being adopted, the ultimate chance of a permanent cure being effected diminishes; and when once the lachrymal sac is distended it may be said to have been lost.

Consequently it is of the first importance that no case of epiphora should be lightly dismissed as being a trivial matter, with a simple

lotion as a placebo, only to be seen again when it has developed into a well marked mucocele. In every case where complaint is made of the eye watering, a careful search should be made for any conjunctival disease; then the patency of the puncta should be ascertained, and also that the position of the lower lid is normal, and also that of the lower punctum. If nothing is found amiss externally, and no mucocele is present, it will be necessary to ascertain the patency of the lachrymal sac and duct by injecting a 2 per cent. solution of **Cocaine** through the canaliculus by means of a Meyer's syringe, the nozzle of which is passed through the uncut lower punctum. Should this latter be too small to admit the nozzle it will be only necessary to dilate it with a conical steel probe. Should the fluid pass readily into the nose a rapid cure is certain. A few injections of a solution of **Sulphate of Zinc**, 2 grains to the ounce, at three or four days' interval, will effect the cure. Should an obstruction be met with it will be wise to postpone any more drastic treatment until the syringing with cocaine, followed by the sulphate of zinc, has been repeated at two or three sittings; and if the obstruction is then found to be permanent a probe will have to be passed, but in a great number of cases the fluid passes after the first one or two attempts, and the cure then will be as effectual as in the first set of cases.

It being necessary to use a probe, a Bowman's No. 2 or 3, which will pass through the punctum and canaliculus without any division of the latter, should be employed, after the local application of some cocaine solution by means of the syringe. On the withdrawal of the probe the cocaine solution should pass freely through the nose, and likewise the zinc solution. Next day it will generally be found that the probe is not required, and the subsequent treatment will be simply confined to the syringing. When, however, the case has been allowed to run on until the sac has become dilated, then it may be found necessary to pass the probe several times before the fluid can be syringed through the nose. Still, as this is not always the case, the probe should never be resorted to until a complete obstruction has been shown to exist.

In those cases where the contents of the distended sac can be pressed by the patient into the nose, it will be found that the lotion can be made to pass through also, if a few drops be placed over the inner canthus previous to emptying the sac; by repeating this manœuvre the sac may be completely cleaned and the cure assisted. This same method should always be adopted in the case of infants, and nearly always it succeeds, and slitting the canaliculus and probing are rarely necessary in young children.

In those cases where the distension of the sac almost precludes a cure, and where repeated syringing does not succeed in freeing the discharge from pus, it will be found necessary to open the sac from in front and dissect out its anterior and dilated wall. The interior of the sac should, according to Despagnet, be scraped out by means of a sharp curette, but the present writer has not found this necessary. The skin wound should be closed by sutures, and the cure is often very complete.

LACHRYMAL SAC (Diseases of). *William Lang, F.R.C.S.*

Both in lachrymal fistula and in mucocele, Adamück incises the anterior wall of the sac and puts in a tampon. In a few days, when the inflammatory swelling has somewhat subsided, he passes lead styles up to 2·5 mm. in diameter. These he leaves in for several days, and as soon as the largest size has been reached he leaves off the treatment and allows the opening into the sac to close, which takes two days.

In young infants with retention of pus in the lachrymal sac, Heddaeus thinks that the fold of mucous membrane that guards the nasal orifice of the duct is imperforate at the time of birth, but opens later on. Therefore no operative means should be employed beyond pressing out the contents of the sac and allowing some astringent lotion to flow into it, or at the most syringing out the sac through the unslit canaliculi.

LARYNGOSCOPY. *P. Watson Williams, M.D., Lond.*

In making a laryngeal examination, we first observe the larynx during quiet respiration (*Plate IV, Fig. A*), noting whether the colour of the mucous membrane is healthy, and the form of the various structures normal, and free from swelling or ulceration. The epiglottis is slightly yellowish, and the rest of the laryngeal mucous membrane is pale pink. The vocal cords should be pearly white, or very slightly pink, and the free margins perfectly smooth and even. They should lie symmetrically midway between abduction and adduction, that is, in the position called the *cadaveric position.*

Next we note the movements of the vocal cords during vocalization (*Plate IV, Fig. B*), and deep inspiration (*Plate IV, Fig. C*). On phonating eh ! eh ! the vocal cords should approach till the free margins almost meet in the middle line, the arytenoid cartilages at the same time being also approximated by the arytenoideus muscle, so as to obliterate the interarytenoid space.

In deep inspiration the vocal cords are widely abducted, diverging considerably more than during quiet respiration, the interarytenoid

space being correspondingly increased. The accompanying diagram (*Fig.* 36) shows the laryngoscopic structures :—

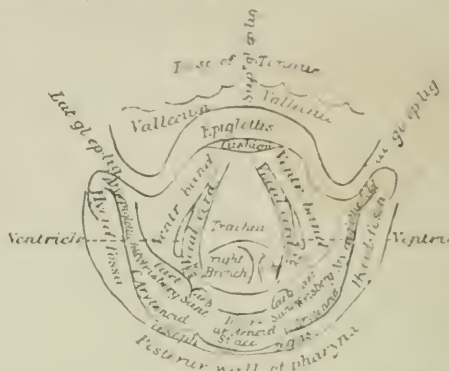


Fig. 36.—Explanatory diagram of the laryngoscopic image.

The difficulties which occur in making a laryngoscopic examination may be due either to faulty manipulation or to the natural conformation of the laryngeal structures :—

(1,) A common fault is to hold the laryngeal mirror too horizontally, and too far forward, so that only the dorsum of the tongue and the anterior surface of the epiglottis are reflected in it. (*Fig.* 37.)

By placing the mirror somewhat further back and lower (as shown in *Fig.* 38), a more complete image is obtained.

(2,) In introducing the mirror clumsily, the fauces may be unnecessarily titillated, gagging and retching being started. This is especially liable to occur if the posterior pharyngeal wall be touched with the mirror.

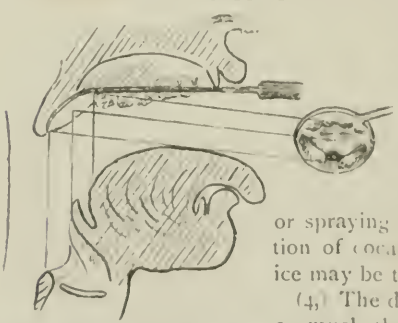


Fig. 37. Diagram showing the faulty position of the laryngeal mirror which will not give a view of the vocal cords.

(3,) Gagging and retching may be due to a hyperæsthetic condition of the pharyngeal mucous membrane, in which case painting or spraying the fauces with a weak solution of cocaine (5 per cent.), or sucking ice may be tried.

(4,) The dorsum of the tongue may rise so much that either the mirror cannot be introduced or its reflecting surface is out of view. If forcible *protrusion* of the tongue by the patient, or taking a deep inspiration does not overcome this difficulty, the patient should hold his own tongue while the examiner depresses the dorsum with a spatula in the left hand. Do not drag on the tongue, nor press it

FIG A

Laryngoscopic image of a normal larynx during quiet respiration. The vocal cords are lying midway between adduction and abduction,—the so called "cadaveric position."

FIG B

The same during vocalisation. The vocal cords are adducted and the arytenoid cartilages are brought into apposition.

FIG

A normal larynx on deep inspiration showing the vocal cords widely abducted.

unduly on the lower incisors. In all cases let the patient protrude it, and then simply seize and hold it firmly in position.

(5,) The patient may be tongue-tied, and protrusion impossible. In this case the dorsum must be simply depressed with a spatula.

(6,) If the tonsils are greatly enlarged, and prevent the introduction of the usual mirror, a smaller one may be tried.

(7,) As already stated, the natural conformation of the epiglottis varies greatly. It may be so pendulous as to overhang the larynx, so that only its anterior surface is seen, the larynx, or all but its posterior margin, being out of sight. There are several ways of overcoming this difficulty. In slighter cases, the act of phonating ēē ēē, or coughing, with the mirror *in situ*, may suffice to raise the epiglottis, when the vocal cords may come into view.

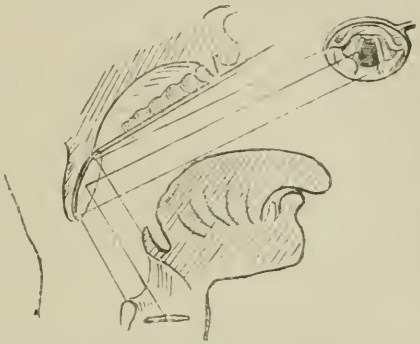


Fig. 38.—Diagram showing the position of the laryngeal mirror which will give the most perfect view of the larynx, and explain the inversion of the laryngoscopic image.

Failing by this manœuvre, direct the patient to throw his head well back, and place the mirror well back and somewhat more vertically (as in *Fig.* 38), the observer's eye being somewhat above the level of the patient's mouth.

In a few cases it is possible to see the vocal cords only after raising the epiglottis with a retractor.

(8,) The patient may hold the breath from nervousness. A few instructions and a little patience will soon get over this difficulty.

Morbid Appearances.—We may now proceed to briefly consider the main features in a few of the more commonly occurring laryngeal affections, referring more especially to those that have a practical bearing in general diagnosis.

The larynx should always be examined when the voice is affected, when pain in the region of the larynx is complained of, and even in the absence of any laryngeal symptom, whenever an aneurysm or intra-thoracic tumour is suspected.

Neuroses of the Larynx.—The right and left recurrent laryngeal nerves supply all the intrinsic muscles of the larynx on their respective sides, except the crico-thyroid muscle, and probably the sphincters of

the glottis (the thyro-arytenoidei), which muscles derive their motor supply from the superior laryngeal nerve; this nerve also supplies sensation to the whole larynx.

The function of the crico-thyroid muscle is to render tense the vocal cords in phonation. It has no power of abducting or adducting the vocal cords.

The muscles which abduct or adduct the vocal cords, act by rotating the triangular arytenoid cartilages on their axes.

Fig. 39.—To illustrate the action of the crico-arytenoidei postici muscles in abducting the vocal cords.

The vocal cords are abducted by the crico-arytenoidei postici muscles which, arising from the posterior surface of the cricoid cartilage, pass upwards and outwards to be attached to the external angles of the arytenoid cartilages. By their contraction the arytenoid cartilages are rotated outward on their axes, and the vocal cords attached to their anterior angles are carried outward. These muscles are used in deep inspiration (*see Fig.* 39). In bilateral paralysis of the abductors alone, the normal tone of the adductors causes the vocal cords to come together, leaving only a very narrow chink for inspiration. The voice may be unaffected, but inspiration is extremely embarrassed and stridulous, and fatal asphyxia is liable to occur rapidly.

Bilateral abductor paralysis may be due to pressure on both recurrent laryngeal nerves, or the cause may be central. It has also been observed following pneumonia and typhoid fever.

Unilateral paralysis of the abductor is much more commonly met with, and is frequently seen in intra-thoracic aneurysm. The voice, of course, may be unaltered, and respiration is not so embarrassed as in bilateral paralysis. The affected vocal cord is seen to remain in the middle line on deep inspiration.

The abductor muscles are apparently more liable to be paralyzed from slight pressure on the recurrent laryngeal nerve than the adductors, and therefore they are earlier affected by tumours or aneurysms pressing on those nerves. It has been held that this is due to the relative position of the two bundles of motor fibres in the nerve trunk, but the more recent researches of Dr. Risien Russell show that the older view that the abductor nerve fibres lose their power of conducting impulses more rapidly than the adductor is more correct.

Adduction of the cords is brought about by the action of the crico-arytenoidei laterales, arising from the sides of the cricoid cartilage, and passing backward and upward to the external angles of the arytenoid cartilages. Their contraction causes inward rotation

of the arytenoid cartilages on their axes, causing the vocal cords to approach in the middle line (*Fig.* 40).

But perfect adduction (*Fig.* 41) requires that the arytenoid cartilages should also be approximated by the arytenoideus muscle, passing from the posterior surface of one arytenoid to the other. If it be paralyzed alone, a narrow triangular chink is left on phonation behind the closed vocal cords (*see Fig.* 42).

Fig. 40.—To illustrate the action of the crico-arytenoidei laterales in adducting the vocal cords.

Fig. 41.—Diagram illustrating the action of the arytenoideus in approximating the arytenoid cartilages.

Bilateral paralysis of the adductors is generally functional, as in hysterical aphonia (*Fig.* 43).

Unilateral paralysis of the adductors *alone* is very rare. The affected cord remains abducted on phonation.

Paralysis of the thyro-arytenoidei, or sphincter of the glottis, causes a chink to be left between the cords on phonation (*Fig.* 44).

Combined paralysis of the arytenoideus and thyro-arytenoidei gives a double chink (*Fig.* 45).

Fig. 42.
Paralysis of the arytenoideus during vocalization.

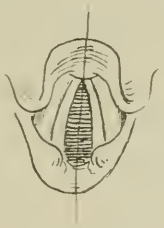


Fig. 43.
Bilateral adductor. Paralysis during vocalization.

Fig. 44.
Paralysis of the thyro-arytenoidei during vocalization.

Fig. 45.
Combined paralysis of the arytenoideus and thyro-arytenoidei muscles.

Laryngoplegia, or total paralysis of the vocal cords, is the usual result of pressure on the recurrent laryngeal nerve. If bilateral, the vocal cords remain in the cadaveric position (as in *Plate IV, Fig. A*), both during phonation and respiration.

In laryngo-hemiplegia, or total paralysis of one vocal cord (*see Fig.* 46), the respiration is similarly unaffected. The voice is generally lower in pitch than normal, is readily tired, and often hoarseness is observed, but ordinary conversation is possible. In male patients, a any rate, paralysis of one vocal cord is often never suspected, because

it is erroneously assumed that *aphonia* must result from paralysis of a vocal cord.

Fig. 46.
Unilateral paralysis of the left vocal cord during phonation.

Fig. 47.
The same in deep inspiration.

During quiet respiration, the larynx appears normal, but in vocalization the healthy cord is over-adducted, and passes across the middle line to meet the paralyzed cord, producing a peculiar distortion of the laryngeal image; the arytenoid cartilage on the paralyzed side being unsupported by its muscles is pushed aside, and lies behind the second and over-adducted arytenoid and, like the corresponding vocal cord, appears to lie at a somewhat lower level than the sound side.

On deep inspiration, as shown in *Fig.* 47, the arytenoid on the healthy side passes further *back*, as well as being more abducted than on the paralyzed side.

The significance of unilateral paralysis of the vocal cord is of considerable importance in medical practice, but presents many difficulties to those who have had no opportunity of special study of the larynx.

Unilateral paralysis of the *left* cord may be due to	Cancer of the œsophagus	Frequent.
	Aneurysm of the aorta	
	Goître	
	Syphilis	Less frequent.
	Ataxia	
	Hysteria	
	Cold	
	Bulbar lesions	Rare.
	Cerebral lesions	
	Primary neuritis of the recurrent	
Unilateral paralysis of the *right* cord may be due to	Aneurysm (of the arch, subclavian)	Frequent.
	Cancer of the œsophagus	
	Goître	
	Various tubercular lesions	
	Syphilis	Less frequent
	Ataxia	
	Cold	
	Bulbar lesions	Very rare.
	Cerebral lesions	
	Primary neuritis	

FIG D

Acute inflammatory œdema, ocurring in a syphilitic patient. On the left is seen commencing ulceration

FIG E

Tubercular laryngitis.—The whole of the larynx is anæmic and infiltrated with tubercular deposits which have coalesced forming the characteristic anæmic sausage-shaped swelling of the epiglottis and the pear-shaped arytenoids and swollen ventricular bands.

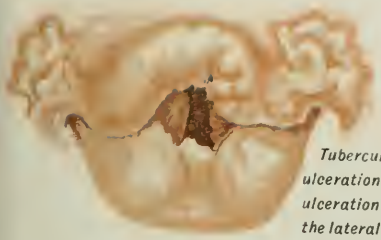


FIG F

Tubercular laryngitis, showing advanced infiltration and ulceration. The epiglottis is breaking down. The extensive ulceration which has occurred on the anterior surface along the lateral glosso-epiglottic folds, with red raised margin, are probably syphilitic, this larynx affording a good example of the combination of tuberculosis and syphilis

Watson, Williams
ad naturam del

Scott & Ferguson, Edin.

Unilateral paralysis of either cord may be simulated by disease of the crico-arytenoid joint leading to fixation—a rare occurrence.*

Non-infective Inflammatory Diseases.—In acute catarrhal laryngitis, the vocal cords are brightly injected, diffusely, or in patches, but the whole of the mucous membrane of the larynx is bright red, and to a certain extent infiltrated. Superficial ulceration of the vocal cords may be observed in some cases, especially in the form complicating typhoid fever.

In children, this affection is attended with graver symptoms, both local and general, than in adults, and is often described as croupous laryngitis.

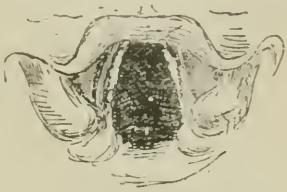


Fig. 48.—Tubercular ulceration of the vocal cords, they being red and injected, and superficially ulcerated along the free margins.

In acute inflammatory œdema (*see Plate V, Fig. D*), the sub-mucous tissues become rapidly infiltrated, and swell to such an extent that the usual form of the epiglottis and ary-epiglottic folds is completely lost and replaced by tense, bright red, sausage-shaped folds of inflamed mucous membrane, which frequently encroach so much upon the opening of the larynx as to produce marked dyspnœa, and threaten suffocation.

In non-inflammatory œdema the mucous membrane is similarly infiltrated, but is less hyperæmic and more translucent.

Perichondritis is usually due to specific inflammatory disease.

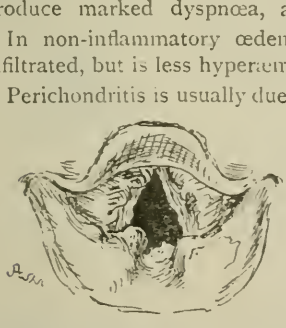


Fig 49.—Phthisis laryngea. Mammillated outgrowths in the inter-arytenoid space, and infiltration and ulceration of the larynx.

Infective diseases of the larynx may be either tubercular, syphilitic lupous, leprous, or diphtheritic.

Tubercular laryngitis may present any of the following appearances: (1,) The appearance may be the same as in simple chronic laryngitis. Cases of catarrh, in which one side only of the larynx is affected, are particularly suspicious; (2,) Superficial ulcerations of the vocal cords (*Fig.* 48). If syphilis be excluded, such ulcerations are *very* suspicious of tubercle, if pale or unilateral; (3,) Fungous, villous, mammillated projections (*Fig.* 49), most frequently observed sprouting from the interarytenoid fold, but also from the vocal cords (*Plate VI, Fig. G*). These out-growths frequently cover the whole

*Altered from Morgagni.

arytenoid region. It must be remembered that very similar out-growths of a non-specific nature may occur in long-standing, simple laryngitis, the so-called pachydermia laryngis of Virchow; (4,) Anæmic inflammatory infiltration (*see Plate V, Fig. E*), most frequently commencing in the mucous membrane covering the arytenoid cartilages, in which cheese-like miliary tubercles appear and rapidly coalesce, so that the arytenoid regions, and ary-epiglottic folds, form smooth, pale, pear-shaped bodies. The epiglottis too, is sooner or later similarly infiltrated, so that the *contour* of the parts may be exactly that seen in *œdema laryngis*, though differing characteristically in colour; (5,) Ulcerations, worm-like and destructive; the floor of the ulcers covered with dirty, greyish-yellow *débris* (*Fig.* 50). The ulcers spread more slowly and less deeply than those of tertiary syphilis.

Fig. 50.—Phthisis laryngea. Worm-like ulceration of the epiglottis, and tubercular infiltration of the ary-epiglottic folds and ventricular bands.

Syphilitic Laryngeal Disease.—The *secondary syphilitic* lesions: (1,) Catarrhal laryngitis, undistinguishable in appearance from simple laryngitis; (2,) Greyish-white condylomata (*Fig.* 51); (3,) Superficial ulceration of the vocal cords, generally bilateral, and localized. *Tertiary lesions* generally take the form of deep and rapidly-spreading ulceration, with bright red margins, and thickenings, most frequently affecting the epiglottis, or vocal cords, and not showing any great tendency to bilateral symmetry. The anterior surface of the epiglottis, and the lateral glosso-epiglottic folds, are common seats of syphilitic ulcers (*see Plate, V, Fig. F*).

Fig. 51.—Syphilitic growths in the inter-arytenoid space.

As a result of syphilitic laryngitis, the vocal cords may become united by a web-like cicatrix, interfering with respiration and vocalization.

Syphilitic perichondritis gives rise to pale swellings in the parts affected, often closely resembling tubercular disease (*Fig.* 52).

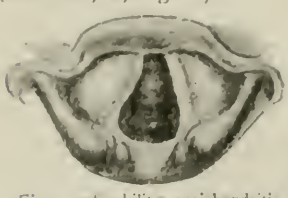


Fig. 52.—Syphilitic perichondritis. Infiltration causing a smooth swelling in the left ventricular band.

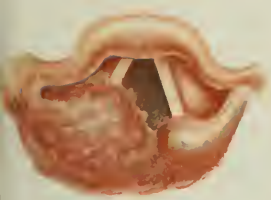
Growths, Neoplasms.—Papillomata, or warts, are more frequent in children than in adults. They appear as pale, pinkish white, mammillated out-growths, single or multiple,

FIG

Tubercular laryngitis.—The ary-epiglottic folds and arytenoid region are diffusely infiltrated. Tubercular outgrowths are seen projecting from the arytenoid space and under surface of the left vocal cord. Both cords are ulcerated and covered with muco-pus. the ventricular bands also show irregular infiltration. The patient died within a few months, with both lungs breaking down

FIG

Benign papilloma growing from the under surface of the left vocal cord of an adult male larynx. On attempted vocalisation the growth projected upwards preventing closure of the vocal cords. Removal completely restored the voice



FIG

Cancer of the Larynx.—An epithelioma is seen growing in the ary-epiglottic fold and extending to the arytenoid region and involving the ventricular band. It is bright red and lobulated, but no portion had ulcerated when this drawing was made.

and situated on the vocal cords, ventricular bands, or elsewhere (*Plate VI, Fig. H*).

Cancer of the larynx generally occurs in the form of epithelioma. According to Semon it often appears as a pale, pink-coloured wart, growing from a vocal cord by a broad attachment, but it may take origin from any part of the larynx. It spreads with varying rapidity, and sooner or later ulcerates. The larynx becomes much distorted by the angry-looking ulcerated growth, and before long the lymphatic glands in the neighbourhood become secondarily implicated (*Plate VI, Fig. I*).

LARYNX (Affections of). *P. Watson Williams, M.D., Lond.*

In the "Jour. Amer. Med. Assoc.," October 24th, 1891, Dr. Seth S. Bishop[1] gives his very favourable experience with **Camphor-Menthol,** the liquid resulting from rubbing together equal parts of camphor and menthol and diluting with a mineral oil. It gave excellent results in relieving the swelling and irritability of acute nasal catarrhs, improving the character of the discharge, and by a few repetitions securing the relief of the stenosis and obviating the operative measures which had seemed unavoidable.

Its effect in laryngitis has been beneficial, and its injection through the catheter into the Eustachian tube and tympanum has been attended by only good results. For the latter purpose a solution of 3 to 5 per cent. is as strong as it is safe; most noses and larynges will bear 10 per cent., while in marked hypertrophic rhinitis, with copious discharge, even 25 per cent. is well borne. "Finally, camphor-menthol contracts the capillary blood-vessels of the mucous membrane, reduces swelling, relieves pain and fulness of the head or stenosis, arrests sneezing, checks excessive discharge, and corrects perverted secretion."

Pachydermia Laryngis.—In this affection the principal change is met with in the processus vocalis of the cords. But it is of importance to note that pachydermia of a simple nature may occur on the posterior wall of the larynx alone, without a coexisting affection of the posterior ends of the vocal cords. In this there may be difficulty in distinguishing it from the somewhat similar grey thickening of the inter-arytenoideal space met with in tuberculosis; and the decision of the question whether we have to deal with the graver disease is often by no means easy.

Scheinmann[2] alludes to the unsatisfactory results hitherto obtained in the treatment of pachydermia laryngis, almost all observers agreeing that the thickening remains for years unchanged, and that therapeutic measures are of service only in lessening the accompanying catarrh.

Schmidt has, indeed, advocated operative treatment, but this can only apply to advanced cases where warty prominences are present: it has little or no application to the diffuse form. Scheinmann brings forward in a recent paper some excellent results obtained from inhalations of steam used over a long period, a gradual disappearance of the thickening being noticed under their action. The use of a simple physiological salt solution, two or three times daily by inhalation, is recommended. In the course of several weeks, the extent of the thickening may be observed gradually to decrease, and the functional activity of the larynx to become strengthened. Still better results may be got from a 2 to 3 per cent. **Acetic Acid** solution. This may be inhaled two or three times daily for ten minutes at a time, and further used as a daily injection of 1 or 2 syringefuls into the larynx. Scheinmann gives the details of some cases treated by this method. He remarks that the first apparent change consists in the pachydermic spots becoming more transparent and softer in consistence, as may be made out by the laryngeal sound.

Growths.—Lichtwitz[3] has successfully treated papilloma of the larynx and the upper part of the trachea by introducing a fenestrated tube. The position of the growth is first determined with the laryngoscope, and a tube of the pattern of O'Dwyer's tubes, but having a fenestra at a point corresponding to the point at which the growth is attached, is introduced in the ordinary way. The papilloma ought then to project into the tube. The operator introduces, with a finger as guide, a forceps or a *porte-caustique*, and removes or cauterizes the growth. The tube should be cylindrical and should have thin walls, and should be blackened on the inner surface. Examinations made on the dead body showed that the upper border of the tube always rested on the ventricular bands, and that the neck of the tube corresponded to the vocal cords. By noting this it was possible to cut the hole in the tube at a point corresponding very accurately to the site of the papilloma. As these growths are generally situated anteriorly, it is best, if the tumour cannot be well seen with the laryngoscope, to introduce a tube with an anterior fenestra, in the hope that the growth may project through it. If this fails, still some information is almost sure to be obtained. One case is related (a girl aged four and a half years) in which a mass of papilloma in the anterior commissure was removed piecemeal at six sittings, and the base cauterized.

This method will probably be found to greatly simplify the very difficult operation of removing papillomata in children.

Dr. Dundas Grant has introduced a *Guarded Laryngeal Forceps* of his design. He describes it as a Mackenzie's cutting-forceps, to the end

of each blade of which is hinged a prolongation, also with cutting edges. These prolongations are jointed together at their distal extremities. The result is that when the forceps are opened, by separating the handles, the blades proper open like the limbs of the letter A, the prolongations, on the other hand, like those of the letter V. There is thus formed a lozenge-shaped space into which an outgrowth readily slips. The instrument can be passed into the larynx with perfect safety. It is intended for the removal of growths projecting into the glottis from the sides of the larynx, not for those on the upper surface of the cords. The instrument is made in two forms, one with lateral, the other with anterior and posterior blades.

REFERENCES.—[1] "Therap. Gazette," April 30, 1892; [2] "Berlin. klin. Wochensch.," No. 45, 1891; "Pract.," Feb., 1892; [3] "Arch. Clin de Bordeaux," No. 4, 1892.

Synopsis.—(Vol. 1892, p. 316.) For the rapid relief of acute laryngitis in public singers, Faulkner first uses a laxative, then 1 % spray of **Cocaine**, with **Aconite** and **Aromatic Spirit of Ammonia** internally, and several lozenges daily, of the following formula: R Morphinæ Bimeconat., gr. $\frac{1}{100}$; Tinct. Aconiti, ♏ $\frac{1}{2}$; Cocain. Hydrochlorate, gr. $\frac{1}{12}$; Rad-althæa Rad, gr. $\frac{1}{2}$. The more acute symptoms having subsided, if the patient has to sing, $\frac{1}{60}$ gr. **Strychnine** may be given after the morning and noonday meals, and $\frac{1}{30}$ in the evening, before using the voice. This extreme dose for an adult man only.

For irritability of the vocal cords from over use, Solis Cohen advises: R Tinc. Benzoini Comp., Tr. Opii Camph. āā ℥ss, Aquæ Ferv. q.s. M. Sig. Use as a gargle, and use the voice as little as possible. *Laryngeal Tuberculosis.*—The surgical interference is preceded by antiseptic applications of **Creasote, Menthol,** and **Oil of Almonds,** for some days. **Iodoform Powder** is insufflated after operation, **Ice** and **Iced Fluids** are taken, **Absolute Silence** being enjoined; the **Creasote** and **Menthol Oil** are used for three days after operation. **Cantharidinate of Potash** seems a doubtful remedy at present,

The Gibbes-Shurly method of injecting **Iodine** and **Chloride of Gold and Sodium** hypodermically, and inhalation of **Chlorine Gas,** is not entirely satisfactory.

Bogroff recommends mixing **Fuchsine** with **Antiseptic Fluids,** *e.g.*, 1 in 1000 **Corrosive Sublimate,** to enable them to penetrate deeper.

Pyoktanin appears to have assisted the healing of tubercular ulcers of the vocal cords.

Bronner treats the early anæmic condition of tubercular laryngitis by **Hot Inhalations** with **Ol. Pini Sylvestris** or **Eucalyptus** and **Tonics.** Paresis of the adductor muscles is often relieved by applying 5 to 10 % **Nitrate of Silver solution**; for catarrh, 2 to 10 % solution, **Nitrate of Silver,** or 5 to 10 % **Zinc Chloride,** may be used. For ulceration, the application of **Lactic Acid,** 20 to 50 % with or without curetting, is generally adopted.

LEAD POISONING.

Synopsis.—(Vol. 1892, p. 322.) Lavrand advises as a preventive, **Iodide of Iron** in pill alone or with **Zinc Phosphide.**

LEPROSY.

Synopsis.—(Vol. 1892, p. 322.) **Chaulmoogra Oil**, beginning with m 10 three times a day, and rapidly pushing it for a long period; also used by friction Fox has found **Arsenic** useful, but **Salol** useless.

Vidal gives **Gynocardic Acid**, 3 grammes daily in capsule or pill: R Gynocardate of Magnesia, 4 gr.; Ext. Gentian, 1 gr.; M Ft pil xx; or 10 to 20 capsules of 20 centigrammes each of **Soda Gynocardate** daily.

Kochine or **Tuberculine** is under trial.

LEUCORRHŒA.

Synopsis.—(Vol. 1892, pp. 43, 49.) **Ferric Bromide**, 3 to 5 gr. Lotions of 10% solution **Muriate of Hydrastine**, or 10 to 30 drops of **Liquid Extract of Hydrastis** to 1 ounce of **Water**.

LICHEN. *T. Colcott Fox, M.B.*

The chief points to be noted in the various papers and discussions are: (1,) The development by French writers of the theory of *lichenification* or *lichenisation* of the integuments in neurotic pruritic subjects; (2,) The treatment of lichen ruber planus; (3,) The gradual crystallization of opinion on the relation of the Vienna lichen ruber acuminatus, and the French pityriasis rubra pilaire.

The term, "results of scratching," has been long in use in this country to denote the various lesions induced by the rubbing and scratching indulged in for the relief of irritation, *e.g.*, the multiform eruption in pediculosis vestimentorum. Many teachers insist on the importance of recognizing and eliminating these "results of scratching" in proceeding to make a diagnosis in itching diseases. Since the promulgation of the theory that some eruptive states of the skin, such as prurigo, are really secondary to pruritus, the subject has been developed by Jacquet, Brocq, and other French writers. By *lichenification* of the teguments, therefore, is meant the chronic inflammatory results due to incessant traumatism of the itching skin by scratching and rubbing. These results are produced with more or less facility according to the degree of "nervovisme" of the subject and reaction of the tissues. We have referred to this subject also under the heading, "Prurigo."

Jacquet, who holds the neurotic theory of causation of lichen planus, had recourse in a rebellious case to the sedative effect of **Hydrotherapy**, with a very good result. He ordered a daily hot douche (95° F.) at low pressure, for about three minutes, followed by a short cold douche, and in a few days the itching stopped, and then the eruption gradually died away. Jacquet has related his further favourable experiences in a number of communications. Materne confirms these observations. In reply to an observation by Quinquaud, that a resort to high altitudes gave good results in obstinate cases, Jacquet said it only

illustrated the importance of getting the patient away from worrying or depressing surroundings.

Bulkley recommends Boeck's prescription of 10 to 20 grains of **Potassii Chloras,** taken in a good deal of water directly after each meal, and followed in half-an-hour by 20 drops of well diluted **Acid. Nitric.**

Jamieson points out the value of **Tartrate of Antimony** (grain $\frac{1}{8}$) in cases of lichen planus, aggravated by arsenic.

Most German writers (Galewski, Neisser, Blaschko, Neumann) hold that there is a lichen ruber acuminatus, and a pityriasis rubra pilaris.

REFERENCES.—Brocq, "Gaz. des Hôp.," Feb. 20, 1892, and Traitement des Mal. de la Peau., 2nd Ed.; Jacquet, "Ann. de Dermat. et de Syph.," 1891-2, and "Sem. Méd.," No. 62, 1891; Materne, "Ann. de Dermat.," June, 1892; Jamieson, "Brit. Jour. Dermat.," Sept., 1891; Bulkley, "Jour. Amer. Med. Assoc.," Nov. 7, 1891; Dubreuilh and Sabrazès, "Med. Cut. et. Syph.," Feb., 1892; Minuti, E'tude sur le Lichen Ruber, 1891, Lemonnier Ed.; Galewski, etc., 2nd German Cong. of Dermat., 1891; Neumann, "Arch. f. Dermat. u. Syph," 1892.

Synopsis.—(Vol. 1892, p. 324.) Jamieson records a case cured by Tartrate of Antimony, gr. $\frac{1}{4}$, every four hours for a week, then thrice daily.

LIVER (Abscess of). (See also "Liver, Surgery of.")

Alexander Crombie, M.D., Calcutta.

A considerable amount of discussion has taken place regarding the treatment of abscess of the liver during the past three years, and the points raised are of immense practical importance.

Pyæmic abscesses and those dependent on suppurative phlebitis of the portal vein do not call for surgical interference, except for the relief of symptoms, or if they point.

Multiple abscess of the liver arising from other causes is a most unfavourable condition for treatment, but it is one which is seldom recognized except on the *post-mortem* table. The treatment, if diagnosed during life, would be the same for each abscess as for single abscess, but there would be but little hope of carrying the case to a successful issue.

Although the use of the aspirator in diagnosis is not free of risk, accidents are of rare occurrence, and the necessity for its use is almost absolute in the majority of cases, especially in the early stages, when the hope of successful treatment is greatest. In all cases of suspected abscess, the outline of the liver should be carefully mapped out on the surface of the body—the upper border by deep and light percussion, the lower border by palpation chiefly (Birch). Any deviation upwards of the upper line of dulness will indicate the probable existence of

an abscess towards the upper convex or diaphragmatic surface of the liver. This is the most frequent situation of acute tropical abscess. But in whatever position the abscess seems most probable, the needle of the aspirator must enter at the point considered most advisable, and be pushed resolutely in the direction indicated until it is felt to enter the abscess cavity. It may have to traverse several inches of healthy liver tissue before the abscess is reached. Aspiration should then be applied, and the needle slowly withdrawn. The point at which the pus ceases to flow will indicate the depth of the abscess from the point selected for the exploration. This and the direction of the needle should be carefully noted.

If matter be not found at the suspected point, the aspirating needle should be withdrawn, and reintroduced either at the same or another point, and made to traverse the liver substance in the most likely directions. The needle should be withdrawn while in communication with the exhausted receiver. In this way a small superficial abscess would be detected, which might otherwise escape notice.

The calibre of the aspirating needle is of importance. The contents of a liver abscess are usually thick, and often flow with difficulty through a small needle, and if the aspirator is used only to confirm the diagnosis, and determine the position of an abscess, a large-sized instrument should be employed. If, however, the presence of an abscess is only presumed, and there is nothing to indicate its possible situation, and exploratory punctures have to be made in different directions, and through many inches of liver tissue, a small or even fine instrument would do less injury to the organ ; and the objection to a fine trocar is more theoretical than practical. A needle of too small a calibre to effectually evacuate a liver abscess may be quite large enough to detect its presence, and it is incapable of the same amount of mischief.

Godlee, accustomed to the chronic course of the abscesses seen in temperate climates, recommends that if the patient be not losing ground, the surgeon should hold his hand for a time, but those accustomed to the rapidly destructive progress of liver abscess, as seen within the tropics, are clear that if the existence of an abscess be even suspected, it must be carefully sought for, and, if found, evacuated without delay. He would also make the operation dependent on its approaching the surface of the organ ; but Indian surgeons dare not wait for that. A small abscess in the centre of the right lobe may be as big as a cocoanut in a week, and the patient in his grave in ten days.

For the same reason it is impossible to wait for adhesions to form

between the surface of the liver and the parietes. In a very large proportion of cases of tropical hepatic abscess, the abscess forms towards the convexity of the right lobe, and the only prospect of early adhesion is between that surface and the diaphgram in a situation which is not practicable for the surgeon, and it must therefore be reached through some inches of healthy liver tissue and a healthy, non-adherent capsule.

This leads to the question of suturing the liver to the parietes before incising, in order to prevent the escape of pus into the peritoneum. Godlee and Greig Smith, with their experience of the more chronic forms of abscess with a more or less distinct lining membrane and definite walls, have found it practicable to do this, and recommended either that the presence of adhesions should be ascertained, or that the peritoneum should be shut off at the point of incision by a double row of sutures, before the abscess is opened. But the acute tropical abscess has nothing in the shape of a lining membrane or cyst wall, which could be stitched to the parietes, and it has yet to be shown that stitches through liver tissue will hold sufficiently for this purpose. Neil Macleod's experiments on the dead body showed that little or no reliance could be placed on their efficacy either in fixing the organ or preventing the escape of pus into the peritoneum, from the difficulty in getting the stitches to hold. This surgeon compares the conditions of acute tropical liver abscess with those of abscess of the brain, where the operator has to traverse the dura mater and some thickness of healthy brain tissue before reaching the abscess cavity, and is not deterred by the absence of adhesions between the brain and the dura mater, and where there has been no proposal to stitch the brain to that membrane before making the incision.

Experience proves that in both operations, with ordinary care and a free vent for the pus, there is no tendency for it to pass between the visceral and parietal membranes, the close apposition of which in the case of the liver is maintained by atmospheric pressure and the resilience of the liver tissue, which causes it to cling round the instrument passed through it, and which effectually shuts off the passage from the peritoneal cavity. However that may be, many surgeons consider themselves justified in disregarding the risk of the entrance of pus into the peritoneal cavity by the experience that peritonitis does not occur as a consequence of the operation, either because the pus does not enter, or because of its non-septic character, and adhesions rapidly form round the drainage tubes employed, so that within forty-eight hours the two opposing surfaces are safely glued together at the point of operation.

If it is determined to operate between the ribs, a point is chosen below the reflection of the pleura, or where absolute dulness on percussion, intercostal bulging, etc., indicate the probability that the pleural cavity is already obliterated by the processes attending the pointing of the abscess at the point selected. It has, however, been proposed to stitch the opposing surface together here also, before incising the liver, but the necessity for this exceedingly difficult manipulation must be very rare, for the reason that the surgeon will seldom select this region for operation, and only when the manifest progress of the abscess towards the surface in this direction will have obviated the need for sutures by the formation of adhesions in front of it.

In marked contrast with the complicated arrangements which have been recently recommended, is the simplicity of the procedure adopted by the Indian surgeon, who only asks for a director, a long narrow-bladed knife, and a drainage tube. Dr. E. A. Birch, principal of the Calcutta Medical College, whose views may be regarded as those of the Indian school in their most advanced and complete form, after a large and very successful experience of the operation, has arrived at the following conclusions: In a large majority of cases, the point of election for the incision is about one inch below the costal arch and one and a half inches to the right of the median line. It does not matter that the abscess be not pointing in that direction. Even though the abscess be obviously on the upper surface of the liver, as shown by an upward deviation of the line of percussion dulness in the neighbourhood of the nipple, the incision should still be made at the point of election, and the abscess cavity reached from that point, though several inches of healthy liver tissue have to be penetrated in doing so. It is, of course, obvious that this could not be done if the liver did not extend well below the point of election. Nor would it be done if any other point were under the circumstances preferable, as when an abscess is pointing below the costal arch in the axillary line; then the operation would naturally be performed in that situation. Even though an abscess be obviously pointing between the ribs, Dr. Birch prefers to operate at the point referred to, and work upwards to the abscess from below. He thinks that a liver abscess should never be opened between the ribs without at the same time resecting a portion of the rib. Without that the drainage tube gets nipped between the ribs; it is difficult and painful to introduce, free drainage is interfered with, and necrosis is liable to occur. If, however, the abscess point in a wide interchondrial space, there is no objection to opening it there, if the abscess is small. When

the aspirator needle is not long enough to reach the abscess from the point of election, the exploratory puncture may be made between the ribs, and the cannula being retained as a guide, a long straight bistoury and a hernia director may be used to work to it from the point of election.

A preliminary operation of suturing the liver to the abdominal wall before incising is not considered necessary, even if it were thought feasible. It would materially complicate the operation, and *post-mortem* records show that peritonitis, the danger feared, does not occur, although it is clear that in many instances there can be no adhesions at the time of operation at the point chosen for the incision.

The method of operation is as follows: The abscess cavity having been found by the aspirating needle, a straight bistoury is passed alongside of it through the liver substance till the abscess is reached, and an external wound three-quarters of an inch long made as the knife is withdrawn. A grooved director is then passed alongside of the cannula, and this being withdrawn, takes its place in the wound in the superficial and deep tissues leading to the abscess. The knife is again passed into the wound in the groove of the director, and the size of the incision of the deeper parts increased, so as to admit the easy passage of a drainage tube of the size selected for the case. (It is obvious that the operation would be simplified still more by using a grooved aspirator needle in the first instance. There would then be no necessity for the preliminary passage of a bistoury to make room for the director, if the groove in the cannula were used as a director. A single incision could be made at once, large enough for the passage of the drainage tube.) The drainage tube should have only two side holes at its farther end. A forked probe is placed within the tube. One prong projecting through one of the holes and passing along the groove of the director carries the tube into the abscess cavity. The probe and director are then withdrawn, and the operation is complete. The dressings should be thick, absorbent, and antiseptic, and changed twice in the first twenty-four hours, and once a day afterwards, unless the discharge is profuse.

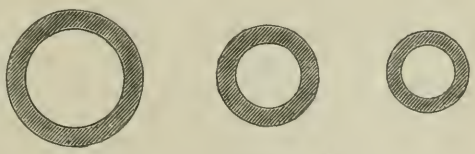


Fig. 53.—Drainage Tubes.

The tubes should be large, to admit the easy exit of the thick liver pus. The three sizes used are here shown (*Fig.* 53), drawn to natural size, the medium being most useful.

Dr. Birch deprecates the use of forceps to expand the track made by the knife for the drainage tube. One of the advantages of operating from below is that any contraction in the size of the liver consequent on the evacuation of the abscess takes place in the direction of the length of the drainage tube, and not at right angles to it, and acute bending of the tube in consequence of the displacement of the relative positions of the wounds in the parietes and liver is avoided.

Of eighteen cases operated on in this manner, Dr. Birch was able to show a record of two removed by friends, four deaths, and twelve recoveries. Of the two patients removed by friends nothing certain was known subsequently. Of the four who died, one died of small pox several weeks after the operation, one had multiple abscess, in one case the right lobe was found to be a mere shell, and a *post-mortem* examination was not obtained in the fourth.

If a liver abscess burst through the diaphragm into the lung, it should, if possible, be got at and evacuated in the usual way to prevent the destruction of lung tissue which inevitably takes place during the process of coughing up a liver abscess. After a short time this ceases to be feasible, and surgical interference, if any, should be directed to the lung.

In opposition to the practice of other Indian surgeons, Lawrie, of Hyderabad, advocates the treatment of liver abscess by aspiration. Of eighteen cases treated by aspiration alone, fifteen recovered and three died. Eight cases were cured by one aspiration, four by two, two by three, and one by six aspirations. Five cases were treated by aspiration and subsequent incision, and all recovered. One of the cases of this group was aspirated twenty-seven times. Dr. Lawrie's rule is to aspirate all cases unless the pus is pointing at the surface, and many are cured in this way without exposure to the risks of an incision. If incision subsequently becomes necessary, he does not find that previous aspiration prejudices the patient's chances of recovery.

REFERENCES.—Godlee, "Brit. Med. Jour.," Jan., 1890; Greig Smith, "Abdominal Surgery"; Neil Macleod, "Brit. Med. Jour.," Dec. 26, 1891; Manson, "Brit. Med. Jour.," Jan. 23, 1892; Birch, "Indian Med. Gaz.," Jan., 1892, and a private letter to the writer; Dabney, "Amer. Jour. of Med. Sci." Aug., 1892; Lawrie, "Annual Report Civil Med. Dept., Nizam's Govt., for 1891."

LIVER (Atrophic Cirrhosis of the). *Frank J. Wethered, M.D.*

Dr. Ivan Gheorgievsky[1] has published a paper detailing his experiments with **Copaiba Balsam** and **Copaiba Resin** in the treatment of atrophic cirrhosis of the liver. The balsam as well as the resin was

administered internally, the daily dose varying from ½ to 1 drachm. The diuretic effects of either of the remedies were invariably "sure, strong, and durable." The daily quantity of the urine increased twice or thrice against that before the treatment. At the same time ascites steadily decreased, the bodily weight correspondingly sank, the patient's subjective condition improved, etc. One of the patients left the clinic quite free from any dropsical phenomena, his recovery appearing to be permanent (at least no relapse occurred up to the date; eight months passed since his discharge). When the resin was used the patients' stools became rather liquefied and frequent during the first few days, but later on the intestinal action regained its normal frequency and character. The administration of the balsam itself, however, was followed by disagreeable eructations, coated tongue, and looseness of the bowels, which occasionally necessitated an anti-diarrhœal treatment. No renal irritation whatever was observed in any of the cases. On the whole, Dr. Ghëorgïevsky comes to the conclusion that copaiba balsam and resin afford fully reliable, powerful, and entirely harmless diuretic agents. He even expects that "their systematic use in atrophic cirrhosis of the liver can make the prognosis more favourable."

REFERENCE.—[1] Ghëorgïevsky, "Pro. Med. Jour.," May 2, 1892.

Synopsis.—(Vol. 1892, p. 44.) In atonic conditions of the liver, **Succinate of Iron**, 2 grain doses, seems promising.

LIVER (Surgery of). (See also "Liver, Abscess of.")

A. W. Mayo Robson, F.R.C.S.

Although undoubtedly the greater number of liver affections are functional, and therefore come under the care of the physician, its organic diseases are becoming every year more amenable to surgical treatment; and it seems not unlikely that for some years to come much progress in this branch of surgery will have to be recorded.

The Treatment of Movable Liver.—Savigny[21] holds that it is impossible to remedy displacement or preternatural mobility of this organ by purely medical treatment. Frequently a tight bandage will be found of great service, especially when the abdominal parietes are unusually flaccid. This, combined with a large pad, will sometimes hold the liver accurately in place. Each bandage must be so contrived as to suit the individual case. Special corsets have been constructed, extending down as far as the symphysis, and constituting, as it were, artificial parieties. Under one or another form of mechanical treatment, all the disagreeable symptoms attendant upon movable liver usually can be successfully combated. Sometimes, in

women, the discarding corsets as ordinarily worn will at once relieve symptoms.

As to treatment, by suturing the liver to the abdominal parietes, although several efforts have been made in this direction, none have been sufficiently successful to justify further endeavours.

Injuries of the liver may occur from stab or gunshot wounds, or from rupture by great violence without external injury. These cases are often amenable to treatment by abdominal section, with the view of arresting hæmorrhage, either by ligature of vessels, suturing together of bleeding surfaces, or plugging bleeding wounds, where the hæmorrhage cannot otherwise be arrested.

In gunshot injuries and in stab wounds, surgical treatment holds out considerable chances of success, *e.g.*, Korte has reported two cases in which cure followed laparotomy. Dr. W. C. Dalton also reported before the St. Louis Medical Society, a case of stab wound, with excessive hæmorrhage, where the liver wound was plugged with iodoform gauze, which was removed at the end of forty-eight hours, when the abdomen was washed out and cleared of extravasated blood and clot, the patient making a good recovery. Other cases of recovery after direct injury have also been reported.

In some instances, however, the surgeon will be powerless, as the patient never sufficiently recovers from the shock to be able to bear an extensive operation. This is well shown by a case admitted to the Leeds Infirmary under my care in May, 1892, where a man had fallen from a considerable height, breaking his arm, fracturing some ribs, and sustaining internal abdominal injuries, accompanied by hæmorrhage into the peritoneum, thought to be from ruptured liver. The catheter proved absence of bladder rupture, and the presence of liver dulness negatived rupture in the gastro-intestinal tract, though the presence of fluid, free in the abdomen, which the exploring syringe proved to be blood, showed internal hæmorrhage. The patient was, however, suffering from such profound shock that it was felt by myself and colleagues that he would die on the table if laparotomy was undertaken. Transfusion was tried, but produced only temporary improvement. An autopsy showed laceration of the pons hepatis, and the abdomen full of blood. Here operation could have done no good.

The indications for surgical interference in injuries of the liver are—In penetrating wounds over the liver, laparotomy should be done as early as possible so as to cleanse the wound, to arrest hæmorrhage, to repair injured viscera, and to wash blood and extravasated fluid from the peritoneal cavity. Even if no visceral lesion be found, this treatment, with due precautions, will not add to the

danger ; but in many cases will be the means of averting death, as there are no constant symptoms which may be relied on to prove or disprove visceral injury.

In internal injury without external wound, and with signs of internal hæmorrhage, if the patient recover from the shock sufficiently to warrant operation, abdominal section should certainly be undertaken in order to arrest the bleeding, and to repair the lesion, if possible.

Rupture of the liver during an epileptic fit is so uncommon that the case reported by Dr. Polakoff[15] is worth relating. A recruit, aged twenty-two, shortly after his admission to hospital on account of right-sided croupous pneumonia, was seized with an epileptic fit, during which he fell out of bed. The convulsions soon ceased, and the patient fell asleep. On awaking he complained of intense pain about the right side, which was ascribed to the pulmonary inflammation, and accordingly on the next morning he was dry-cupped. A few hours later he died with symptoms of acute anæmia. At the *post-mortem* examination the abdominal cavity was found to contain about five pints of straw-coloured serum, while the right side was occupied by a large quantity of blood clots. The liver was extremely anæmic, but of a normal consistence, its measurements being 27 × 19 × 12 centimètres. The right lobe was torn across, the rent, which measured 6 centimètres long by 2 deep, running parallel to and about 5 centimètres from the right edge, and involving the peritoneal coat.

That abscess of the liver is more common in England than many writers would lead one to suppose, is shown by the reports in the journals of numbers of cases operated on at home ; for instance, no more instructive or important series than the twenty-four cases commented on by Mr. Godlee could be mentioned. The diagnosis of hepatic suppuration is essentially a surgical procedure, and although the symptoms and signs may lead to a suspicion of abscess, it is to the exploring syringe or the aspirator that one will have to resort to prove the presence and the situation of the pus. During the year, two unusual causes of hepatic abscess have been reported ; in one a needle,[11] and in the other a round worm having set up suppuration.[5] After pus is found, the sooner efficient drainage is obtained the better for the patient,[1, 2, 13] and as a rule when the liver is explored the surgeon should be prepared to proceed to the major operation at once, or within a short time, for wherever pus is discovered in the liver, it can be reached by one or other method.

If the abscess be pointing in the usual positions, either at the epigastrium or over the lower ribs, it may have contracted adhesions,

and simply require a free incision and drainage. If there be no sign of pointing, but the liver be enlarged downwards, and the abscess can be reached below the margin of the ribs, the treatment is as a rule simple, as the area of the operation can be made superficial by suturing the parietal and visceral layers of the peritoneum together with a single row of silk sutures, before the abscess is opened. This I have proved to be efficient on several occasions, the union being in one case sufficiently firm to withstand considerable manipulation in packing the wound for hæmorrhage from the abscess cavity.

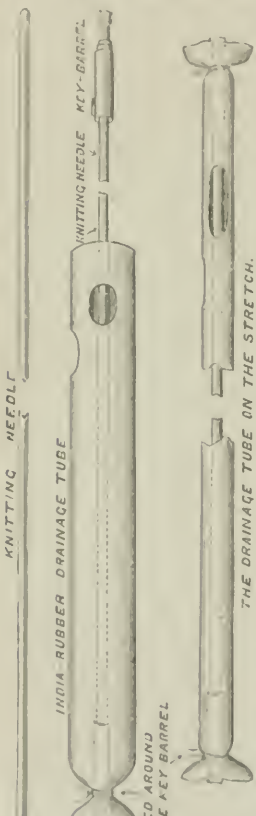


Fig. 54.

This suturing of peritoneal surfaces, though advisable where possible, is not by any means absolutely necessary, so that where it cannot be easily accomplished it had better not be attempted, as it certainly involves some little time in doing, and this may be an important factor in the case.

In one case of abscess of the liver, associated with gall-stones, I found such matting of the adjacent viscera, and the liver substance to be so friable, that I had to be content with thoroughly opening the abscess, washing it out and packing with iodoform-gauze, leaving the cavity in the liver widely open towards the peritoneum. No peritonitis ensued; the packing was changed twice daily, and an uninterrupted recovery followed. Once I packed a similar cavity with sponges; after thoroughly washing it out, the sponges being changed from time to time, and being left out after forty-eight hours, when a clean granulating cavity remained, and healed kindly.

In one case, where I had cleared out an abscess in the right lobe of the liver, just above the gall-bladder, I used the right border of the omentum, with complete success, to shut out the general peritoneal cavity, stitching it to the parietal and visceral layers of the peritoneum like a veil, below the drainage tube. Where the abscess has to be approached through

the thorax, either above or below the diaphragm, a little more difficulty is experienced, and the simple appliance of a stretched drainage tube (*Fig.* 54) will be found convenient, if the pus be situated far from the surface, or the patient be too ill to bear a longer operation. It will be seen that it consists of a long trocar and a stretched drainage tube, the stretching being accomplished by a knitting needle and two small key barrels. The stretched tube is easily passed through the trocar as soon as the pus has flowed away, and on sliding the trocar over the tube the latter is left in the abscess cavity. The outer extremity of the knitting needle is then lifted out of its socket and the finger placed on it. The tube will then retract and thoroughly fill up the trocar opening; the needle is then removed, and the outer end, including the key barrel, is cut off flush with the skin, the extremity being transfixed with a safety pin, in order that it may not disappear. This saves time, avoids hæmorrhage, and fills the drainage opening in the liver, so preventing escape of pus by the side of the tube before adhesions have had time to form. It seems to me to accomplish in a simple manner, what is effected by Dr. Manson's[1] very ingenious, but somewhat complicated apparatus, which he has employed with success on several occasions. If the drain be large and made of thick rubber, it will answer the same purpose as the solid drainage tubes recommended by Dr. Macleod.[2] If, however, time be no serious object, and if adhesions have not formed, then it is not difficult to suture the peritoneum of the liver to the diaphragm; and if the incision be through the pleural cavity, the parietal and visceral pleuræ may be easily fixed by sutures by means of a needle in handle.

This is much easier than usually described, as the bulging liver pushes the diaphragm close to the chest wall and, as a rule, it is unnecessary to excise any rib if the interspace be widened by a wedge or by retractors; but if the intercostal space give too little room, subperiosteal resection of a portion of rib can soon be performed.

When the pleura is opened, suture of the parietal and visceral layers is advisable, both on account of the movements of respiration tending to draw pus into the pleural cavity, and because of the dyspnœa which may come on owing to pulmonary collapse from pneumothorax.

That this is not an imaginary difficulty is proved by a case which came under the care of one of my colleagues, who had to firmly pack the parietal wound in order to ease the distress of his patient.

The real secret of success in treating abscess of the liver is free drainage, without obstruction at the external opening. After the abscess is opened, it should be dealt with very gently; at most, being

syringed out with a solution of boracic acid, until the fluid returns clear.

The drainage tube had better be cut off flush with the skin, a safety pin being pushed through it to prevent its slipping into the cavity. It is wise to fix the right side of the chest with strapping, and to apply a bandage firmly over the dressings. The dressings I usually employ are the double cyanide gauze and salufer wool; and I need scarcely say that care is taken to follow out antiseptic methods, and to thoroughly purify the skin wide of the wound. Adhesions cannot be relied on and need not influence the decision to drain, as drainage can be done efficiently and well, though no adhesions be present. Surgical interference seldom, or perhaps never, does any good in pyæmic abscesses of the liver, which are usually multiple and small, often associated with jaundice, with enlargement of the liver, and with typhoid symptoms. Although the prognosis in such cases is almost hopeless, I have operated, and should feel inclined to do so again, if I found a distinct collection of pus, and the patient's general condition warranted operation, just as I should open a pyæmic abscess elsewhere, in the hope that the relief afforded might give the patient a better chance of surmounting this and the other difficulties.

In all other liver abscesses operation is urgently demanded, though in multiple abscesses it will often fail.

Aspiration may very occasionally succeed in effecting a cure, but it should not be relied on except as a merely temporary measure; the value of the aspirator in these cases is for diagnosis, and not for treatment.

Where one abscess is opened, and others are thought to be present, it is better to push an exploring syringe through the walls of the cavity already opened, and then, if another collection of pus be found, it can be drained through the same opening.

If a liver abscess have burst into the lung, pleura, stomach, peritoneum, kidney, or pericardium, and can be diagnosed, it should, if possible, be evacuated at its source, and the secondary troubles treated *secundum artem*.

Dabney concludes a paper on hepatic abscess, with the following summary of his views: (1,) Hepatic abscesses rarely occur as a result of injuries or diseases of the bones or other parts of the body, except those directly connected with the portal system of veins, or immediately adjacent to the liver; (2,) Ulceration of the bowels is a common cause of hepatic abscess, but neither the morbid changes nor the symptoms are those of dysentery. It is probable that in most cases, at least when the hepatic abscess is due to dysentery, the latter

disease is amœbic in character ; (3,) An hepatic abscess may appear in two weeks from the commencement of the dysenteric attack, but the usual time is from four to twelve weeks. It is impossible to say how long a time must elapse after an attack of dysentery before all danger of hepatic abscess is past ; (4,) Abscesses originating in the bile ducts, and those due to injuries of the liver itself, seem to be of comparatively rare occurrence. When due to injury the abscess usually appears in a few days ; (5,) Abscesses occurring in connection with general septicæmia or pyæmia are probably nearly always multiple and small, but in rather more than half of all other cases the abscess is single and comparatively large. Abscesses due to gall-stones, however, are usually multiple ; (6,) Aspiration occasionally fails to reveal an hepatic abscess, because the needle may not enter it, or the contents of the abscess may be too thick to flow through the needle ; (7,) There are no means of determining with certainty the presence or absence of adhesions in a given case ; pain, tenderness, and œdema over the seat of the liver suggest the presence of adhesions, but are by no means certain proof of their existence. Even the up-and-down movement during respiration of a needle inserted into the liver is not a conclusive proof that adhesions do not exist ; (8,) Of the symptoms and signs of hepatic abscess, pain, tenderness, and swelling in the hepatic region are by far the most important. Fever is present in a large proportion of cases, is intermittent in character, and, except in pyæmic cases, rarely rises above 102·5° or 103° F. Jaundice and ascites nearly always denote the presence of dense adhesions or gall-stones ; dyspnœa and cough are frequently present ; (9,) It is doubtful whether absorption of the contents of an hepatic abscess ever occurs ; bursting is of frequent occurrence, the most usual direction being into a bronchus or the pleural cavity. Under expectant treatment death occurs in a large proportion of cases before bursting ; (10,) With respect to treatment, free incision and drainage give far better results than any other method. The results of aspiration are rarely satisfactory, nor is the procedure entirely free from danger.

Although sub-phrenic abscess is not necessarily connected with liver disease, it is frequently associated with it, and requires similar treatment.

The abscess may be approached from the back, below the twelfth rib, following along the diaphragm until pus is reached, or opened through an intercostal space, if possible below the reflection of the pleura, but if this be impossible, and the incision have to be made through the pleura, the two pleural surfaces had better be sutured before the diaphragm is incised.[10]

Hydatid Disease.[1]—A couple of years ago Professor A. S. Lebedeff and Dr. A. I. Andreeff, of St. Petersburg, published interesting experiments which prove beyond any reasonable doubt that daughter-cysts of human echinococcus, when transplanted into a rabbit's abdominal cavity, will continue to grow and even multiply. Following Prof. Lebedeff's suggestion, Dr. Stadnitzky has lately repeated the experiments, his results furnishing an additional support to the last proposition. The following are practical corollaries deduced by him from the instructive facts: (1,) On operative interference in cases of abdominal echinococcus in man, the surgeon must take the strictest possible precautions for preventing any penetration into the peritoneal cavity of contents of echinococcus cyst, since otherwise daughter-bladders will grow and multiply therein and thus give rise to all formidable symptoms peculiar to the disease; (2,) In such cases of hydatid of the liver, where there arise some suspicions that the maternal cyst has burst and its contents emerged into the peritoneal cavity, abdominal section should be performed without delay; (3.) In view of the said dangers, an exploratory tapping, as a means for diagnosing abdominal hydatids in suspicious cases, should be either given up altogether, or, at least, practised only in certain quite exceptional cases.

Dr. Davies Thomas, in an elaborate paper in the "Australian Medical Journal," says that in a considerable number of cases he had 90 per cent. of recoveries after hepatotomy, and that, as compared with tapping, which failed to cure in 40 per cent. of cases, and gave a mortality of 18 per cent., it is much superior.

His experience of parasiticide injections was equally unsatisfactory, though Dr. Arthur Sennett reports favourably of the injections of a 1 in 5000 solution of mercuric perchloride. If possible, in performing hepatotomy, the cyst should be approached from below the ribs, and the cavity thoroughly emptied; but if it project upward it may be needful to resect a portion of rib,[6] and should the pleura be opened it can be closed by suture.

A free incision must be made into the cyst, as the daughter cysts may require to be evacuated by a lithotomy scoop or a spoon. In one case, I evacuated successfully a large wash hand basin full of small cysts by means of a tablespoon. As soon as the sac is emptied, and cleansed by washing out with boracic lotion, its margins had better be sutured to the surface, and a large drainage tube inserted. Mr. Knowsley Thornton has proved that drainage is not always necessary with strict antisepticism.

Boully[27] discusses the subject of the treatment of hydatid cysts.

Those containing numerous daughter cysts, those which are multiple and disseminated in the same organ, and those which are suppurating should be treated by incision. Simple unilocular cysts containing characteristic clear liquid are most successfully managed by means of sublimate injections. The author has treated ten cases of hydatid cysts by means of these injections, and has been successful in eight cases. Twice the effusion was reproduced. In one instance this was due to faulty technique.

The method of procedure is to empty the cyst of all its contents by aspiration. This having been accomplished, a drachm and a-half of Van Swieten's solution, or of a sublimate solution (1 to 1000) is injected into the cavity and allowed to remain. The puncture wound is closed by means of iodoform collodion. The temperature generally rises the evening of operation. It returns to the normal line the next day. Cure is rapid and complete. The last case the author operated on was suffering from great pain, was vomiting, dyspnœic, and had marked fever; 3 drachms of Van Swieten's solution were injected; the patient was entirely cured.

Several of the patients have been under observation for some years, and in all the cure has been permanent.

Besides hydatid, I have performed hepatotomy in other liver cysts; in one, a single cyst, three inches from the surface, was attacked in the linea alba. It contained about one-half to three-quarters of a pint of clear mucous fluid, like gall-bladder secretion, and was, I believe, due to a dilatation of one of the hepatic ducts within the liver, as a fistula discharging a little bile was ultimately left.

In another case, in a child four years of age, the liver nearly filled the abdomen, and an opening to the right of the unbilicus exposed the liver free from adhesions.

After the parietal and visceral layers of the peritoneum had been united around a space two inches in diameter, I freely incised the liver, and came on a multilocular cyst, with thin membranous septa. The fluid, which was clear, had a sp. gr. of 1008, and contained albumen; no hooklets or other signs of hydatids could be discovered. The child recovered and left Leeds two months afterwards, the liver being then a little larger than normal. I have not been able to hear of her since.

Excision of part of the liver has been performed for hydatid disease, for hernia of the organ through a penetrating wound, for tumours of a simple nature, and for cancer.

Von Meister[8] finds that in the dog and cat, as well as in the rabbit, the removal of more than three-fourths of that organ is not followed

by any serious consequences, and that within the space of thirty-six days repair has advanced to such an extent that the weight of the organ is regained. This regeneration is effected partly by hypertrophy of the hepatic cells, but mainly by their hyperplasia.

Vohtz excised successfully an echinococcus cyst about the size of a child's head, together with some atrophied liver tissue. Tansini also had a successful case; and Terrillon succeeded in resecting a portion of the liver containing numerous small hydatid cysts; but to my mind resection involves so serious an operation that it can only be justifiable in hydatid disease under exceptional circumstances.

A few months ago I exposed a painful tumour about three inches in diameter in the left lobe of the liver, which proved to be a calcified hydatid; but as I felt sure the disease was in process of cure, I decided not to perform resection, and the patient has been better since. Should, however, the disease produce further incapacity, I feel sure it would be easy to stitch the parietal peritoneum all round the tumour, and then to remove it and pack the wound with iodoform gauze, as in Tiffany's case.[15] Resection may be performed with the elastic ligature, with knife or scissors, or with the actual cautery. The elastic suture, suggested by Dr. Babacci, is worth bearing in mind to bring together the opposing liver surfaces, and so to arrest hæmorrhage, and secure early union.

Dr. Keen[3] records a remarkable case of resection of a liver tumour, which proved to be an adenoma originating from the bile ducts. The author also publishes a list, compiled by Dr. Westcott, of all the cases of hepatotomy hitherto reported—twenty with only two deaths.

Cancer of the liver has been removed by Lücke, the affected portion of the viscus being successfully resected; but as the disease is usually diffuse and often secondary, it is scarcely likely that the operation will be frequently entertained. I have exposed the liver on four occasions, with a view to the removal of tumours, but in each case either other nodules have been present or the disease has been too extensive for successful resection. Curiously, in all the cases, the patients have been relieved for a time by the exploration, and in one case, to me quite inexplicable, the tumour, about the size of a goose's egg, adherent to the contiguous parts and hard like scirrhus to the exploring needle, disappeared; and the patient is now quite well, some months after operation.

Mr. Tait has also recorded cases where such relief has occurred, but I believe that no satisfactory explanation has yet been given of the "curative effects of operation *per se*," although Dr. J. H. White[4]

relates numerous cases where a simple exploratory operation has apparently been the means of curing disease to all appearance hopeless.

Hepatic phlebotomy, first proposed and practised for congestion of the liver by Dr. Harley, and afterwards elaborated by Dr. Kelly, of Philadelphia, who directly abstracts blood from the liver, after exposing it through a small incision, is an operation which it seems to me can seldom be called for. I have no experience of it, but with due respect to its eminent author, I should think it must be attended with a considerable amount of danger; and at the best can only give slight and temporary relief.

Surgical Intervention in Cases of Non-Calculous Affections of the Liver.—Terrier[17] reports two cases of cholecystotomy performed for the treatment of hepatic affections which had previously been regarded as strictly within the province of the physician. In one case he performed exploratory laparotomy, and established a biliary fistula in a man, aged thirty-three, for the relief of symptoms of congestion and hypertrophy of the liver, with intense jaundice and febrile attacks. On the fourth day after the operation the jaundice had almost completely disappeared, and the liver had diminished in size. The patient soon recovered from the hepatic affection, and when last seen, about eighteen months from the date of the operation, had remained free from relapse. The second case was one of chronic jaundice, with hypertrophic cirrhosis of the liver and hypertrophy of the spleen, in a girl aged twelve. The gall-bladder, which was distended, was exposed by a vertical incision made along the outer edge of the right rectus muscle, and then opened and fixed to the abdominal wall. No good results were obtained from this operation. The jaundice persisted, and the liver, together with the spleen, increased in size.

Liver Disease and Operations.—M. Verneuil[18] states that the slightest operation frequently terminates fatally in patients whose livers are diseased, in spite of every precaution. He cites three cases in his own practice. The first was that of a man whose foot was amputated; at the end of three days jaundice appeared and right pneumonia. The patient died, and the autopsy revealed cirrhosis of the liver. The second case was that of a woman who was suffering from flooding caused by a large uterine polypus; the tumour was removed by abdominal section, but the woman sank on the third day. Cirrhosis was discovered at the *post-mortem*. The third patient had cancer of the liver, but, being seized with strangulated hernia, relief had to be given. She died, however, on the tenth day. M. Verneuil, in con-

clusion, said that it would be well to make an attentive examination of the liver before operating, and wait to treat it if possible.

Actinomycosis of the Liver.—Brigidi[18] records a case of actinomycosis in which the disease occurred primarily in the liver, and became disseminated through the lungs, giving rise to clinical signs, and, indeed, to macroscopic appearances *(post-mortem)*, which could hardly be distinguished from disseminated tuberculosis. Another point of interest is the fact that the disease had extended to the adjacent part of the suprarenal capsule, a part which has not been before recognized as affected with actinomycosis.

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LUNGS (Diseases of). *R. Shingleton Smith, M.D., B.Sc., F.R.C.P.*

The Pathology and Treatment of Phthisis.—The curability of phthisis is a subject on which it is still necessary to insist. How often is it the case that a patient is allowed to delude himself into the belief that his symptoms are due to a cold, or else that it is only bronchitis, until the pathological changes are so advanced that treatment has little opportunity of modifying them. An early diagnosis is at the root of the successful treatment of the disease ; and, it cannot be too often urged, that the diagnosis of tubercle in the lungs or

elsewhere is not a necessarily fatal condition. A knowledge of the pathological conditions associated with the arrest of the tubercular process will do much to counteract the practice of doing nothing to arrest it; hence, one of the most noteworthy essays of the year is that by Dr. J. K. Fowler, on "Arrested Pulmonary Tuberculosis" (Churchill, 1892). The author asks the profession to discard the use of the term phthisis, and to speak of a pulmonary tuberculosis as we speak of a tubercular meningitis, pleuritis, or peritonitis: the disappearance of the term, "Stages of Phthisis," will necessarily follow. He classifies the cases under the following distinctive names: (1,) Pulmonary tuberculosis; (2,) Miliary tuberculosis of the lungs; (3,) Caseous tuberculosis of the lungs; (4,) Fibroid tuberculosis of the lungs. He is not satisfied as to the existence of a syphilitic phthisis.

The characters of tubercular lesions are described as follows: (1,) If the life of the tubercle is short, it may remain a grey miliary granulation, and may be so found in autopsy; (2,) It may undergo caseation, either separately, or after having coalesced with neighbouring granulations; (3,) A caseous mass may soften and be discharged, a vomica being the result; (4,) Such a mass may undergo cretification; (5,) A caseous mass may become surrounded by a fibrous capsule, and may so remain during the life of the individual, who may die of some non-tubercular disease; (6,) After a varying period local changes may lead to the breaking through of the capsule and to the softening and discharge of the contained matter, if still caseous, or to its discharge as a calcareous mass; (7,) In the process of softening a caseous mass may open up a communication with a blood or lymphatic vessel, and absorption of the virus may be followed by acute general or pulmonary tuberculosis. Or, in the course of its discharge, the virus may be inhaled into other portions of the lungs, and may there set up a local tuberculosis; (8,) A miliary tubercle may undergo fibroid transformation, followed, as a rule, by pigmentation. This change may affect a few granulations, or by its extent may form a marked feature in the case, in which event the term fibroid tuberculosis becomes applicable.

The obsolete lesions which may be considered as evidences of tubercular disease arrested, are enumerated as follows: (1,) Pigmented tubercles which have undergone fibrosis; (2,) Fibroid induration, puckering, and scarring of the apex, with or without undoubted tubercles; (3,) Areas of caseation surrounded by a fibrous capsule, or by deeply pigmented tissue, the latter sometimes presenting obvious granulations; (4,) Cretified masses similarly situated; (5,) Cavities of the size of a hazel-nut with smooth walls, filled with pigmented

material of caseous consistence and not in communication with a bronchus. Larger thick walled cavities are, as a rule, clearly of tubercular origin.

With the above lesions certain others are generally associated and are consecutive to them. Such are : (6,) Scarring and puckering of the pleura ; (7,) Adhesion of the pleura, with areas of extreme thickening, the result of the separation of the vesical and parietal layers by the contraction of an intra-pulmonary lesion ; (8,) Thickening of the interlobar septa from contraction of neighbouring disease within the lung ; (9,) Dilatation of the bronchi. This is in nearly all cases a compensating change ; (10,) Surface emphysema, bullæ of various sizes being situated around the contracted lesions ; (11,) Compensatory enlargement of other parts of the same lung, or of the opposite lung ; (12,) Obliteration of the intercostal spaces ; (13,) Displacement of organs, etc. ; (14,) Caseation of the bronchial glands.

After an analysis of one hundred and seventy-seven cases of obsolete pulmonary lesions, the evidence of the tubercular nature of those lesions is then reviewed under the following headings : (*a*,) The site of the lesion ; (*b*,) The absence of any other adequate cause ; (*c*,) Infective properties of the morbid products ; (*d*,) Presence of tubercle bacilli in obsolete lesions ; (*e*,) Results of inoculation experiments ; (*f*,) Association with acute tuberculosis.

As regards the conditions of arrest the author " fears that it is not to remedies which effect the elimination of tubercular deposits that we must look forward with hope in our battle with pulmonary tuberculosis, but rather to such as increase the resisting power of the individual, and enable his tissues to stop the progress of the disease. This they are ever striving to do, even when the destructive process is most acute, and it is only necessary that the local or constitutional conditions should turn in their favour for them to commence the construction of the fibrous wall which will turn back the invader."

Dr. H. P. Loomis[1] has given further evidence on the anatomical changes of cured phthisis.

At a recent meeting of the New York Pathological Society he presented the lungs from four cases to illustrate these changes.

The frequent presence of these lesions in post-mortem examinations gave ground for the belief that many more persons recover from tuberculosis than would appear from clinical observations. Out of five hundred and twenty-four autopsies at Bellevue Hospital on persons dying of non-tubercular diseases, forty-three or 8 per cent., presented in the lungs the changes which he considered characteristic of healed tuberculosis. Dr. Austin Flint had stated that out of six

hundred and forty cases of phthisis, forty-three or 6·5 per cent., recovered; and Dr. Williams, of London, reported that out of one thousand cases, 4·6 per cent. were cured. The question of the existence of tubercle bacilli in these apparently healed areas could only be satisfactorily demonstrated by inoculation experiments, and in the few which he had made, these bacilli were not found.

In phthisis pre-eminently must general hygienic conditions be included in our therapeutic armamentarium, and the article on "Re-infection in Phthisis," by Dr. Arthur Ransome[2], deserves full consideration. He refers to the post-mortem researches of Marsini and Dr. Harris, of the Manchester Royal Infirmary, as well as to the observations of other pathologists which prove that, "there must be a large proportion of persons in whom one attack of phthisis at least has been recovered from, and who are most of them unconscious of the peril through which they have passed. He asks, "Why in so many cases the patients suffer from a series of attacks, until ultimately they end in death? And, again—Whether there may not be something in the homes of the poorer class of patients that renders them more liable to a return of the disease?

The usual, and in many instances the correct, answer to this question is, that tuberculosis is an infective disease, that it spreads along the lymphatics or blood vessels, and that though the bacilli may cease for a time to irritate, and may many of them be discharged from the body, yet a sufficient number remain behind to sporulate and spread through the lungs or through the system, and this occurrence is most likely to occur in unhealthy conditions of life.

But there is at least one other explanation of a revival of the disease, and that is by a *reinfection from external sources*. It will no doubt be extremely difficult to prove in any given case that such reinfection has taken place, and that any particular outbreak of the disease has been due to such a cause; but a few considerations will show not only its possibility but its extreme probability in a large number of cases.

Lastly, it is fair to count the numerous cases now known to have remained free from fresh outbreaks after change of residence as, for the most part, instances of escape from reinfection from without. If, as some physicians contend, after a first attack the disease remains latent, waiting only for an opportunity to develop, it is difficult to understand why so many of these cases escape, in spite of the many depressing circumstances that often attend the change of residence and change of occupation. It is precisely among those persons who take to a hard life, with exposure to outdoor influences, often with poor

and insufficient food, that are found the best instances of permanent cure. In many cases, in order to avoid the foul air, which the author and so many others consider the chief source of danger, poor patients often have to descend into a lower grade of labour, such as agricultural employment, omnibus conducting, ship-stewardship, and so on, and yet the so-called latent tubercle finds no fresh point of attack, and the disease only reappears when the patient has been exposed to new sources of infection from without. In his opinion, the theory of redevelopment of latent tubercle under these circumstances is contrary to all the canons of scientific evidence.

The author quotes several cases which have left a profound impression on his mind, and have led him to affirm the strong probability of reinfection upon a patient's return to previous conditions of life. This leads to the inquiry as to the best means of preventing such an occurrence, especially in the large class of cases in which removal to another dwelling cannot be carried out, and he thinks that the practical lessons to be drawn from the facts are : (1,) The need either of change of residence or the thorough disinfection of premises occupied or frequented by consumptive persons ; (2,) The duty of constantly destroying by fire or corrosive sublimate the sputum from these patients. These measures have hitherto been chiefly advocated on the plea that they are necessary for the protection of other members of the family or of the public, but if it be true that in many cases of phthisis the primary lesions would entirely heal unless fresh infection takes place, it becomes a part of our treatment for the cure of these cases to take care that these measures are carried out.

Dr. J. West Roosevelt[3], in an elaborate paper read before the Association of American Physicians, reviews the various points bearing on the frequency of the localization of phthisis in the upper lobes.

Dr. Burney Yeo[4] sums up the conditions of cure in consumption, in a paper read before the Medical Society of London.

In order to effect a cure in phthisis the conditions which must exist are briefly these : (1,) Early recognition of the disease, especially in its first, occult, or germinating stage ; (2,) The early occurrence of haemoptysis was favourable to the cure of phthisis ; (3,) A natural tendency to a fibrous rather than a caseous metamorphosis of the exuded products ; (4,) Absence of excessive tissue sensitiveness or irritability ; (5,) The absence of hereditary taint ; (6,) The introduction of a small number of bacilli, or of bacilli of low energy or of mitigated virulence ; (7,) The channel by which the bacilli were intro-

duced was of importance ; if they gained admittance by the respired air, it was more favourable than if they were introduced through the blood stream or by way of the lymph vessels ; (8,) A sound organic state of the patient.

A few therapeutic conditions were also worthy of consideration. The patient should be fed with suitable food, in such quantities as to secure assimilation and digestion. In France, excessive feeding had been largely carried out, as they held that, in order to obtain cicatrization, hyper-nutrition was necessary, and this latter was only to be obtained by hyper-alimentation. He quoted a case to show how cure was brought about by a method similar to that of the Weir-Mitchell treatment. The patient should live in the open country or by the sea, in the sunshine, or in a dry, aseptic, unirritating atmosphere, which need not necessarily be cold. He thought that most of the sanatoria in the Swiss Alps were very imperfect ideals for the treatment of the general run of consumptive cases, for their atmosphere was not always unirritating, and attacks of acute bronchitis, pneumonia, and pleurisy were common. He had seen better results produced by South Africa and South California, while the Canaries or Madeira were good for advanced cases. Very early cases, or advanced cases with vigorous organisms, did well in Switzerland. A minute attention to the details of daily life and hygiene was necessary, and repeated counter-irritation he regarded also as of value. As to chemical and pharmaceutical measures he had not much to say ; the tissues of one individual reacted so differently from those of another, and drugs had been applied under so many different conditions in consumption. He had often used hypophosphite of lime, which was good in children and young people, and in the fair and florid ; it did not agree with the dark and sallow, who, indeed, responded indifferently to any form of treatment. He had seen excellent results in some cases in which sulphuretted hydrogen had been introduced into the large intestine. From the use of tuberculin he had also seen good results ; indeed, he had had only one failure, and that was in a dark, swarthy subject. Speaking of tuberculin, he said that though the manner in which it had been introduced to the profession was deplorable, yet it would have been more creditable if less feeling had been shown in its denunciation. Antiseptic inhalations did good if persevered in. He had also great faith in **Creasote** and **Guaiacol** given internally, especially if administered in large doses by the bowel.

TREATMENT.—Little progress can be recorded since our last report. Tuberculin has almost sunk into oblivion, and the only noteworthy

experiments on any purified forms of it are those of Hunter and Watson Cheyne[5] and those of Klebs[6]. The chief danger attaching to the crude tuberculin appears to be due to a by-product acting on the heart, and producing a profound fall of blood-pressure.

Koch for a time had failed to purify the preparation from these products, but Klebs has succeeded in obtaining a purified product, which he called tuberculocidin, from which the by-effects on the heart are absent.

Dr. Carl Sprengler[7], of Davos, undertook a confirmatory testing of this purified preparation. He believed that the entire absence of irritant properties is not altogether an advantage in phthisis. He found that the drug removed dyspnœa, reduced hectic, and modified cases of active phthisis by eliminating the worst features, but tuberculocidin lacks the necessary activity. Koch aims at reaction, alteration, and destruction; Klebs aims at preservation and resolution; whilst Sprengler maintains that the reconciliation of these views is unconditionally necessary to the perfecting of the method. Hence, he advises a tuberculin-tuberculocidin mixture.

Dr. W. R. Huggard, of Davos Platz, writes as follows on Dec. 12th, 1892, on creasote in phthisis:—

"For some years I have used creasote and guaiacol extensively in the treatment of phthisis. My opinion regarding these drugs may be expressed very briefly. They are both of very great value indeed in their action on tubercular disease in the lungs; but I do not regard them by any means as the specific into which they have been erected by some physicians. I think even that in some cases they are directly harmful to the morbid process in the lungs.

"The cases in which they seem to be specially indicated are those of chronic and not very active tubercular softening, and cases in which the disease already tends to become quiescent. In such cases, if they do not interfere with digestion, their influence, when taken steadily for a considerable time, is extremely favourable. In cases where there is a tendency to inflammation in the neighbourhood of softening tubercle, creasote has often seemed to me definitely to provoke an inflammatory disturbance. More especially have I noticed this when the drug was administered subcutaneously. I have also observed a much greater tendency to hæmorrhage and blood-stained expectoration in patients taking creasote than under any other form of medication usual in phthisis. So much has this observation impressed itself on me that I now hesitate to prescribe the drug where a tendency to blood-spitting is a feature in the case.

"The tolerance shown by patients to creasote depends very much

on the mode of administration, and by no means the same form suits every patient. Taken in cod-liver oil capsules it agrees probably as a rule with most patients better than in any other way. I have known some persons, however, quite unable to take creasote by the stomach in any effective dose, but who took it with advantage and without inconvenience subcutaneously for a long time. Other patients again have taken it in lavement; and in certain cases this mode of administration should always be borne in mind.

"It may be laid down as a cardinal law in the treatment of phthisis, that no drug will benefit the patient if it upsets his digestion. I do not think that creasote is of much value unless from 10 to 20 drops are taken in course of the twenty-four hours; and if not tolerated in these doses, much more advantage will be gained by some other drug, such as the various terebinthinates, the balsams, helenin, salol, or the salts of lime, most of which are effective in smaller doses, and very rarely disturb the digestion. A favourite combination of mine, is terpin hydrate (1 part) and salol (2 parts); 10 or 15, or even 30 grains of this powder may be given three times a day, after meals. It is practically tasteless, and very rarely indeed does it cause any digestive disturbance or eructation. This terpin and salol powder is suitable in cases where creasote is not tolerated, or where, according to my experience, it is contra-indicated; that is, in cases attended with a high degree of fever, in hæmorrhagic cases, and in cases with a tendency to inflammatory outbreaks. Of the cases under my observation, in which entire arrest of tubercular disease of the lung took place, a greater number were taking these drugs than were taking creasote.

"I am sure that a great deal of harm may be done by the indiscriminate administration of creasote advocated by some enthusiasts. Some physicians regard it almost as a specific, and believe that if it can be taken in large enough doses for a long enough period, it will infallibly arrest tubercular disease in the lung. I have known 30 minims to be taken every day for months without any benefit whatever to the lung disease, while a certain amount of improvement was observed under some other form of medication, and the readministration of creasote always seemed to have an irritating effect on the disease. I do not, therefore, think that the physician can discharge his duty to a consumptive simply by prescribing creasote, without carefully watching the action of the drug.

"I regard creasote as an extremely useful medicine in phthisis, but likely to fall into disrepute if it continues to be ordered as indiscriminately as it is at present."

He sums up the precautions which he considers might culminate in the stamping out of phthisis altogether :—

"All cases of tubercular disease of the lungs ('Consumption') take origin directly or indirectly from other cases. This is now an established fact. Infection, however, is easily provided against if certain simple precautions are taken. The chief modes of infection are :—

"(1,) *By inhaling dried and pulverized expectoration.*—This is apt to occur when an ordinary pockethandkerchief is used by a tubercular person for expectoration. When such a handkerchief is opened, the dried expectoration is likely to be pulverized and diffused through the air. Thus it may be inhaled by others as well as by the patient himself, who is likely to suffer from drawing disease germs into portions of lung previously unaffected. Another source of pulverized expectoration is the habit of spitting on the ground. The expectoration becomes mixed with dust, and then is easily carried into the air. This habit, therefore, is not merely offensive, but dangerous.

"(2,) *By using spoons, cups, and other articles of the kind which have not been properly washed after having been used by tubercular persons.*

"(3,) *By kissing.*—This source of infection is especially to be guarded against in the case of children.

"*Self-infection* may occur, in addition to the ways mentioned, *by swallowing the expectoration.* This habit is likely to lead, sooner or later, to infection of the intestines with tubercular disease. Knowing the channels of infection, we can easily take effective precautions.

"*The sputum must be destroyed, and must not be allowed to become dry.*—A spitting cup or flask, containing just enough disinfectant solution to cover the bottom of the vessel, should always be used for the expectoration. Out of doors a pocket spitting flask, such as Dettweiler's, should be employed. Pieces of linen or calico, about ten inches square, may also be carried. These should be used only in case of absolute necessity ; and should be burnt as soon as possible afterwards. No piece should be used more than once.

"*Bedrooms* that have been occupied by tubercular patients *should be thoroughly disinfected* before they are occupied by other persons ; and a declaration or assurance on the point should always be demanded. If the previous occupant of the room never allowed the furniture, hangings, or carpets of the room to be contaminated with the sputum, there would be little need for this precaution. But as people, ordinarily of cleanly personal habits, sometimes show a surprising amount of ignorance or carelessness in this respect, the following points should be insisted on : (1,) Carpets, curtains, and bed-coverings should have been exposed to superheated steam under high pressure ;

(2,) The floor and walls of the room should have been properly disinfected. (Rubbing with new bread, followed by the application of corrosive sublimate solution is probably the most effective practical method.)

"There is *no danger of infection from the breath of a tubercular patient.* The sole danger of social intercourse arises from neglect of the precautions described. Fresh air is of the highest importance for tubercular persons. Hot and stuffy rooms have an evil influence over the disease. Except in special circumstances, the bedroom window should be kept open by night as well as by day."

Sommerbrodt[8] returns to his method of treating phthisis by creasote and claims now that he has been able to arrest the disease in advanced stages. He draws attention to the necessity of administering the drug in larger doses than are usually given. He holds that creasote in large doses (15 to 60 grains by weight daily) is in innumerable patients an excellent remedy for pulmonary tuberculosis, no other drug being at all equal to it. It is given in capsule form with cod-liver oil. Formerly Tolu balsam was used, but it was found that the capsules often passed through the intestinal canal unchanged, owing to the resinous nature of the menstruum. The pill form was likewise objected to, on account of the loss of creasote after being kept for some time. The best way is undoubtedly in capsules, with a readily-absorbed fat such as cod-liver oil or olive oil. If the expense of this form is a bar to its employment, Hofmann's mixture (creasote 1, tincture of gentian 2) may be used ; 20 to 80 drops freely diluted with water being given, or this mixture may be administered in wine. With regard to its effect upon the stomach, Sommerbrodt says that for the first few weeks creasote often reveals itself by eructations, but as a rule these cease very soon. In cases where it is said not to be borne, it is always questionable whether the form of administration does not play a prominent part, as change in this removes the difficulty. When dyspepsia sets in, the remedy must of course be stopped for a few days.

Freudenthal[9] uses the well-known formula—creasote, 10 parts, and tinct. gent. co. 20 parts. He begins with 2 drops three times daily, and increases 1 drop each day until the maximum dose of 100 of the solution is taken three times a day in wine, whisky, brandy, milk, or water.

As an indication of the large doses which may be taken, he reports the following case of poisoning by creasote :—

Woman, æt. thirty, Feb. 24th, 1891, advanced phthisis of both lungs ; April 15th, taking 60 drops of creasote daily in 3 doses of the 1 in 3

mixture ; July 5th, taking 100 drops daily, and was dizzy at times after a dose of 100 minims of the mixture ; Dec. 6th, taking 200 drops of the mixture twice daily ; Jan. 6th, 1892, took 300 drops (100 drops of creasote), twice daily ; Jan. 29th, took this dose, went for a walk, did not feel well, came home, and drank a glass of wine. Feeling weak, she took another dose of 300 drops of her mixture, and became unconscious for eight to nine hours, was narcotized, with stertor, *râles* over chest and trismus ; lips cyanotic, pupils contracted. Pulse, 128 ; Respiration, 30. There was paralysis of all reflex movement, and urinary incontinence, but without carbolic staining of the clothing. There was no damage to kidneys, no evil results followed, and the patient soon increased the dose to 500 drops twice daily, for which dose tolerance was soon established.

In opposition to the practice of giving large doses is the experience of Kinnicutt[10] whose conclusions are : (1,) That both creasote and guaiacol in certain forms can be given in very large doses with entire tolerance and without injurious effects ; (2,) That such dosage apparently possesses no advantages over a much smaller one ; and (3,) That it has no greater effect on hectic and night sweats ; (4,) That subcutaneous injections of these drugs possess no advantages over administration by the mouth ; (5,) That whatever beneficial influence creasote may exert in pulmonary tuberculosis can be effected with a comparatively small dosage ; and (6,) That favourable results can be expected only after a continuous and prolonged employment.

Evidence of the utility of creasote and guaiacol steadily accumulates, and these drugs are clearly being used very freely ; but it is curious how little is recorded as to the results obtained. This is no doubt due to the fact that time is required to establish any results in a disease like tubercular phthisis, and mathematical evidence is difficult to procure. Opinions in favour of the method are numerous : that of Dr. G. H. Penrose[11], of Washington, B.C. is characteristic of many others. He remarks that, "these drugs are of infinite worth and are more than palliative in their action."

The writer has employed guaiacol as being the purer and more reliable preparation. He finds no difficulty in getting the most fastidious patients to take it in increasing doses, culminating in 60 or 90 minims daily.

The form preferred has been the solution in *tincture of gentian*, commonly the 1 part in 3 ; this mixture may be taken in milk, or in orange wine, or sherry, and the cod liver oil may be given floating on the compound. Sometimes the *capsule form* has been preferred, when 2 to 5 minims are given in each. The guaiacol

may also be given in *solution in cod-liver oil*, 1 to 5 minims per drachm, when it is easy to administer 60 minims daily by giving a tablespoonful dose of the solution after each meal. If the taste of the guaiacol be objected to, a *cod-liver oil capsule*, with the requisite dose of guaiacol dissolved therein, may be given.

The *cod-liver oil emulsion* may also be used as a vehicle for a sufficient dose of the guaiacol.

In one way or another large doses of the drug may be given by the alimentary route, and hence there is little need for the adoption of the *hypodermic method*, strongly advocated by Roussel, Picot and Robertson[12], whose paper on the hypodermic administration of **Guaiacol** and **Iodoform**, read at the British Medical Association last year, concludes with the following summary: (1,) That in empyema, with free drainage, the treatment does good in improving the general condition, and in diminishing the discharge from the pleural cavity, but that without free drainage it is of uncertain value; (2,) That in pyrexial phthisis, whether the disease is small in extent or so extensive that the case seems almost hopeless, this method is not an absolutely certain antipyretic, but it is commonly of decided advantage if persevered with in reducing the fever, and thus diminishing the activity of the disease; (3,) That even where it fails within a reasonable time to modify the fever, it is still serviceable in most cases in diminishing expectoration and in modifying the cough; (4,) Though it is serviceable in limiting waste by reducing temperature and by diminishing expectoration, it cannot be said that this treatment is specially favourable to increase in body-weight; (5,) The treatment is without risk with ordinary precaution; (6,) Its use does not prevent the development of other tuberculous outbreaks or extensions of tuberculous mischief, for tuberculous meningitis, pleurisy, hæmoptysis, pneumothorax have been shown to occur after many injections; (7,) In interpreting the mode of action of these remedies, their antiparasitic action should not exclusively be thought of. It should not be forgotten that both remedies act, even in small doses, upon the patient himself; that so long ago as 1867, Headland, in his "Action of Medicines," described creasote as a sedative, a stimulant of mucous membranes, and as a true astringent..

Dujardin-Beaumetz,[13] with reference to the hypodermic injections of creasote, is convinced that pure olive oil is the best vehicle available; a 1 in 15 solution of creasote in olive oil sterilized by heat has given encouraging results.

The writer, after a very considerable experience of the hypodermic method, is convinced that no fluid does better than a sterilized

solution in almond oil, the strength of which may be 50 per cent. This solution of guaiacol may be given by subcutaneous or intra-pulmonary injection, and if injected slowly will rarely give rise to any local irritation. Doses of 1 drachm have been given daily by subcutaneous injection, and continued for several weeks.

Iodoformized Guaiacol has been given by hypodermic injections by Drs. Massalengo and Silvestri[14], who obtained satisfactory results from injections into the supraspinous fossa of a solution of 1 part iodoform, and 5 parts guaiacol, in 100 of sterilized oil of sweet almonds. They found that the cough, expectoration, number of bacilli, fever, night sweating, appetite, weight and general appearance were improved, and that no other pharmaceutical curative method has yielded such satisfactory results.

Benzoyl-guaiacol.—The tarry odour and nauseous taste of guaiacol are to some patients so unpleasant that attempts to find a satisfactory substitute have led to the use of the drug which is now well-known as benzosol. (See "Dict. of New Remedies," p. 11.)

Further details are given by Heneage Gibbes and Shurly[15] on the value of inhalation of **Chlorine Gas**, and the use hypodermically of **Iodine** and **Chloride of Gold** and **Sodium.**

Twenty-seven cases are reported in detail; of these, thirteen were practically well and looked upon as cured by this method.

Dr. Longstreet Taylor[17] gives his results of the Shurly-Gibbes method. He claims no cures, inasmuch as permanent results can only be claimed when years have elapsed without any recurrence of active symptoms. "No plan of treatment ever has or ever can be instituted that will cause extensive infiltration to disappear, or that can make a well man out of a tubercular subject far advanced in the third stage of the disease." He believes his results to be encouraging, and he now urges it in all cases in conjunction with climatic change. He is convinced that the one is an aid to the other, and that a larger percentage of improved cases results from the combination than from climatic treatment alone.

The hypodermic use of **Gold** and **Manganese** is advised by Dr. John Blake White,[18] New York, whose injections, made in the dorso-lumbar region, of a fluid containing gr. $\frac{1}{25}$ of combined salts with a few minims of 1 per cent. of carbolic acid, gave results surprising and superior to anything seen before. The injections were believed to have considerable power to ameliorate the condition of phthisical patients, whose marked improvement occurred in as many weeks as formerly required months.

M. Nadaud,[19] in a communication to the Academy of Medicine of

Paris, claims marked success by the hypodermic injection of **Aristol.** He mixes 1 part of the drug with 100 parts of sweet almond oil: of this he injects 1 c.c. daily; the maximum dose is 3 c.c. daily. In all, he so treated twenty-three patients, who were suffering from pulmonary tuberculosis; of these, seven were decidedly benefited; one of them he believes is cured.

M. Nadaud terminates his paper with the following conclusions: (1,) Aristol when used hypodermically produces no toxic effects; (2,) It is principally eliminated by the lungs; (3,) Aristol acts as an antiseptic and promotes nutrition; (4), The action of the drug is prompt; on the sixth or seventh day the cough lessens and the night sweats cease; (5,) After the twentieth or twenty-fifth day the weight of the patient is increased; (6,) The earlier the stage of the disease, the better the results; (7,) The injections do not produce inflammation.

Dr. Renzi [20] advocates a new treatment for phthisis, consisting in the use of **Iodine** internally, in the following form:—

℞ Aquæ dest.	gr. 1000	Pot. Iod.	gr. 3
Iodine	gr. 1	Sodium Chlor.	gr. 6

This was first injected into the ear vein of healthy and tuberculous rabbits, into the subcutaneous tissue of dogs, rabbits, and guinea-pigs. Complete tolerance being established, he tried the remedy on phthisical patients. Hypodermic injections were first adopted, and as much as 100 gr. were given; these were not, however, well borne, so the drug was then given by the mouth, using from 500 to 550 gr. Nineteen patients, nearly all with advanced phthisis, were thus treated. In all, the treatment produced increased appetite and increased flow of urine. Symptoms of iodism arose in a few instances, but disappeared on leaving off the treatment. The author is of opinion that the results of this treatment will compare very favourably with those of any other at present tried; the body-weight increases, the number of bacilli diminishes in the sputum, and the temperature is reduced to normal.

Monochloraphenol, which was prepared by Signor Tacchini,[21] a chemist in Pavia, has been employed in the treatment of phthisis by Dr. Passerini, of Casate-Nuovo, with great success. It is used as an inhalation, and being a powerful antiseptic like trichlorophenol, but much less irritating, and being besides exceedingly volatile, it is capable of penetrating deeply into the lungs, and it is thought that it may act directly on the tuberculous foci themselves. These inhalations may be continued for a long period, and are said to cause the bacilli to diminish and even to disappear from the sputa, and to occasion a most marked improvement in the symptoms. In five cases of an early

stage of phthisis, complete recovery is said to have ensued after two months' treatment, and no recurrence of the symptoms to have taken place in the six months that have subsequently elapsed.

Dog's Serum has been recommended by Héricourt,[22] who says that it is the serum of dogs protected by aviary tubercle against human tuberculosis that should be used in the treatment of tuberculosis in man. The monkey is also refractory to aviary tubercle, and the natural immunity may be increased by further inoculation with aviary tubercle.

Inhalations of **Hydrogen Dioxide** have been recommended by Gabrilovicz.[23] Six cases were greatly improved, the results being certainly encouraging. This treatment was advised for cases of laryngitis, bronchitis, whooping cough, asthma, and in the early stages of laryngeal and pulmonary phthisis.

Inhalations of **Sulphide of Carbon** are commended by Coronilas.[24] He was successful in obtaining satisfactory results in fifty-eight cases out of seventy-three, thus giving 76 per cent. of cures. The author advises the following mixture :—

℞ Sulphide of Carbon 15 grms | Water 100 grms
Phosphate of Calcium 10 grms |

Every eight or ten days the medicament should be renewed, increasing the sulphide of carbon by 5 grammes over the preceding dose, until an amount of 30 grammes has been reached, never going beyond this. The author formulates the following conclusions : (1,) The inhaling apparatus should never contain more than 200 grammes of water ; (2,) In winter, especially in cold climates, the apparatus should be well covered with thick cloths, in order to facilitate the evaporation of the carbon sulphide. For the same reason the temperature of the room where the inhalations are to be taken should be constantly kept at 20° or 25° ; (3,) Before each inhalation the mixture in the apparatus should be well stirred ; (4,) At the beginning of the treatment the patient should take from three to four long and deep inhalations, repeated every three or four hours, and later, more frequently,—that is, every two or three hours ; (5,) The mixture should be renewed every eight or ten days ; (6,) If the patient, during the inhalations, be taken with haemoptysis, as he has observed in two cases, the treatment should be absolutely suspended until this trouble has entirely ceased.

Camphoric Acid has again given good results in the treatment of the night sweats of phthisis. Bohland[25] gives 1 gramme in a wafer at nine or ten o'clock at night ; the dose may be increased to 2 grammes or even to three if necessary. The results were satisfactory in about 80 per cent. of the cases.

Tellurate of Potassium has also given good results in fifty cases reported by Pohorecky.[26] Usually less than ½ a grain was sufficient to prevent sweating during the night. It was found that day sweats required rather larger doses.

Powdered Beef as a food for phthisical patients has been studied by Dr. Thomas J. Mays,[27] Philadelphia, and the clinical effects of a preparation known as Mosquera's beef-meal has been satisfactory. It was found to be palatable, digestible, and nutritious.

Mosquera's beef-meal is fresh lean beef, digested and preserved with pineapple juice, then dried and powdered. It has no pronounced disagreeable odour, is free from bitter taste, and is somewhat soluble in water. It is believed to represent all the constituents of fresh lean beef in a predigested state. As it comes from the manufacturer, the powder is in a pure state, or mixed with equal parts of powdered chocolate and sugar. It may also be mixed with sweetened hot coffee or milk, or with an eggnog. Frequently a little wine, brandy, whiskey, or rum may be added with advantage. It may also be administered with all kinds of broths and soups. The quantity which may be given varies from a dessert-spoonful to a table-spoonful of the raw powder, four or five times a day. When it is served in hot coffee, cocoa, or milk it must be well stirred up and mixed.

Excision of Apex of Lung.—This heroic operation is reported, the "New York Medical Record" informs us, in "La Gazetta Medica di Granada." Dr. Tuffieri exhibited his patient, cured, before the Surgical Society. Having satisfied himself by preliminary experiments on lower animals, that the operation might be performed with safety, he cut "through skin and some fibres of the pectoralis major, laid bare the intercostal muscles of the second intercostal space, and exposed the parietal layer of the pleura, which he detached from the thoracic parietes. Opening the pleura, he found the lung apex studded with tubercle and slightly shrunken. Round the apex he passed a ligature, which he attached to the second rib, and then excised 5 centimètres of the tuberculous mass." The condition of the patient ten months later was highly satisfactory; he had gained weight, and presented no morbid sign on auscultation or percussion.

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[13] "Sem. Méd.," Dec. 30, 1891 ; [14] "Gazetta degli Ospitali," 1892, No. 86, p. 802 ; [15] "Berl. klin. Woch.," Jan. 18, 1892 ; [16] "Therap. Gaz.," April and May, 1892 ; [17] "Therap. Gaz.," Dec. 15, 1891 ; [18] Med. Rec.," Sept. 10, 1892 ; [19] "Med. Press," Oct. 21, 1891 ; [20] "Riv. Clin. e. Therap.," No. 6, 1892 ; [21] "Lancet," Dec. 19, 1891 ; [22] "Brit. Med. Jour.," May 7, 1892 ; [23] "Therap. Gaz.," Nov. 16, 1891, and "Gaz. Mèd. de L. ège," ; [24] "Jour. de Méd. de Paris," April 17, 1892, and "Therap. Gaz.," July 15, 1892 ; [25] "Lancet," Jan. 2, 1892 ; [26] "Lancet," March 9, 1892 ; [27] "Therap. Gaz.," May 16, 1892.

LUPUS ERYTHEMATOSUS.

T. Colcott Fox, M.B.

At the second International Congress on Skin Diseases and Syphilis, Malcolm Morris introduced a discussion on lupus erythematosus, and briefly set forth the phases of its history. The discussion illustrated the prevalent opinions as to its nature. Morris advanced the view that it is an inflammatory affection belonging to the erythema group, and not necessarily connected with any microbic infective agent. "It depends in the first instance on local circulatory disturbance, which may be due to some external agency (cold, heat), or to some nerve disorder." Radcliffe Crocker considered it as essentially a reflex disease of weak peripheral circulation, which would explain its remarkable tendency to symmetry, and that microbes probably played a secondary but important part. He admitted the frequency of a strong phthisical family history, but thought tuberculosis merely a predisposing cause. Veiel stated that of one hundred and nineteen cases, only 7 per cent. showed a tuberculous family history, and only five patients died of tuberculosis. Brocq agreed with Boeck that the disease was due—like many forms of erythema—to the presence of special toxines ; in this case to those particularly prone to develop in persons of tuberculous taint. Schiff thought there was some connection with tuberculosis, and two of his patients eventually died of phthisis. Hallopeau regarded it as probably an attenuated tuberculosis, and Jamieson suggested that possibly the disease was produced by an invasion of nerve trunks by the bacillus tuberculosis, much as the b. leprae acts in anæsthetic leprosy. Thus some connection with tuberculosis was admitted by most speakers, but differently explained. The majority were of opinion it was an affection distinct from *lupus vulgaris*.

Bulkley wrote very favourably of his long experience of **Phosphorus** as a remedial agent administered in Ashburton Thompson's formula.

Hallopeau, Colcott Fox, and Petrini de Galatz, have recorded interesting cases of exanthematic or multiple widely disseminated macules. Besnier also contributes a most remarkable generalized eruption of erythematous patches in a girl of seventeen, which he

regards as probably lupus erythematosus. An autopsy made by Petrini de Galatz did not disclose any special features. Hallopeau has noted vegetating patches on the cheeks in one case.

REFERENCES.—Besnier, "Ann. de Dermat.," 1892; Inter. Cong. Dermat. and Syph., 1892; Hallopeau, "Ann. de Dermat.," 1892; Colcott Fox, "Med. Soc. Trans.," London, 1892.

Synopsis.—(Vol. 1892, p. 328.) Brocq recommends the following, the former to be used by day, the latter by night: ℞ Acid. Salicyl. ʒss, Acid. Lactic. ʒss, Resorcini gr. 45, Zinci Oxidi ʒij, Vaselin pur. ʒxvij, M. s. a.: ℞ Acid. Salicyl. 1 part, Acid. Pyrogall. 2 parts, Vaselin pur. 20 parts, M.

LUPUS VULGARIS.

T. Colcott Fox, M.B.

At the Bournemouth meeting of the British Medical Association, July, 1891, Dr. J. F. Payne introduced a discussion in an able paper. The general opinion of the speakers was strongly in favour of the tuberculous nature of lupus. Another discussion on cutaneous tuberculosis was introduced by addresses from Drs. J. C. White, J. T. Bowen, and C. H. Fox. White reviewed the various forms in which tubercle attacks the skin, and emphasized the frequency with which they occur in the same individual. He regards lichen scrofulosum and Unna's "eczema tuberculosum" not as tuberculous, but as only arising in tuberculous persons. Bowen dealt with the pathology, and Fox with the therapeutics, but of lupus only. Fox depends mostly on the curette and dentist's burr, and in ulcerating nasal lupus on the scarifier. **Pyrogallol** is the local application he thinks best. After curetting he applies pyrogallol ointment (25-50 per cent.) until a slough separates, and then mercurial plaster is applied for some weeks.

Leloir has demonstrated that the process of lupus and syphilis may proceed together in the same place, producing a dual disease, *e.g.*, in a gland or on the skin.

Colcott Fox records four cases of cutaneous tuberculosis originating in people aged sixty, sixty-two, sixty-nine, and eighty-one respectively, and some apparently from inoculation.

Walters describes a case in which lupus was presumably brought about by inoculation (see also the Bournemouth and American discussion); Skerritt noted an extensive lupus of the face and hands, and bacillary phthisis of both lungs; and C. Morton the following in sequence(?); lupus of hand, a ganglion reacting to tuberculin, nodules in the forearm, enlarged axillary glands, phthisis, all on one side.

Koch's tuberculin, which undoubtedly has valuable uses, has been the means of stimulating experiment by other substances. Thus Klebs introduced an active principle separated from tuberculin, which he calls tuberculocidin.

Unna, on the theory that every patient carries about with him a reservoir of tuberculin in the living or dying organisms, seeks to set this free by **Massage,** and thus local specific effects are produced, identical with that occasioned by tuberculin injections.

Liebrich's **Cantharidinate of Potassium** has been a good deal used, and its action on lupus foci is unmistakable. Others, such as Federow, have tried Lannelongue's sclerogenic method by **Zinc Chloride** injections. Robertson has got good results by the injection of 5 or 6 minims of a 1 per cent. solution of **Corrosive Sublimate.**

H. G. Brook has enlarged his experience with a method of treatment suitable as a valuable auxiliary in certain cases in which, for various reasons, the adoption of more radical treatment is not possible. He rubs in thoroughly the following ointment, and then covers it with potato starch to disguise the lupus patch :—

℞ Zinci Oxidi		Acidi Salicylici	20 gr. vel q. s.
Amyli pulv.	āā ½oz.	Ichthyolis	20 ♏ vel q. s.
Vaselini albi	½ oz.	Ol. Lavandulæ	q.s.
Hydrarg. Oleatis (5 per cent) ℥j		M. ft. Ung.	

(The ointment is suitably coloured with red Armenian bole and raw umber.)

Brooke thinks this treatment most effective in cases of scrofulodermic tumours and ulcerations, and in lupus developed from the scrofulodermic basis.

Unna finds that **Carbolic Acid** attacks preferentially the older and already disorganised elements, and rapidly induces molecular disintegration. He confirms his former experience that in some cases single or repeated active cauterization with carbolic acid can cause the disappearance of lupus nodules. Bonaudrini advocates, before using galvano- and thermo-cauteries, etc., a preliminary use of chrysarobin, which tends to convert the soft granulomatous tissues into more normal connective tissue. Harrison, of Bristol, acts on lupus tissue by generating nascent **Sulphur** and **Sulphurous Acid** deep down in the diseased structures. This is carried out by applying a **Hyposulphite of Sodium Lotion** (gr. xl to ℥j of water) on lint covered by gutta percha tissue or oil-skin at night, and in the day time a **Hydrochloric Acid Lotion** (♏v to ℥j of water). Lastly, we may mention the good results obtained by many surgeons by **Total Excision** of lupus patches. The treatment of the wound will vary with the extent of the excision and the character of the wound. Sometimes a linear scar can be obtained, but large wounds should be healed with Thiersch's grafts. Hahn, Segner, Thiersch, Mracek, Baur, Kramer, and others have written on this matter.

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Synopsis.—(Vol. 1892, p. 328.) Whitford scrapes, dresses with **Iodoform**, and **Grafts** the patches. **Pyrogallic Acid** application and **Iodoform** dressing require no anæsthetics. **Nitrate of Silver** boring is useful for minute patches. Walker prefers **Caustic Potash Stick**, dressing after with **Boric Ointment**, and **Grafting**, if necessary.

Rusin cured a case by six hypodermic injections of 1% solution **Chloride of Gold** with 1% **Cyanide of Potassium.** Coomes successfully applied 1 in 1000 solution **Methyl Violet**, after cleansing with **Saline Washes** and **Peroxide of Hydrogen.** Phillips applies **Lysol** on cotton twisted round a probe. Amicis says **Balsam of Peru** helps on healing. Burbureaux in local tuberculosis slowly injects 50 grammes daily of the following: R Rectified Creasote, 1 gramme; Pure Oil of Sweet Almonds, 14 grammes, increasing the dose up to 100 or 200 grammes. Pure **Liquefied Carbolic Acid** painted on is very useful. **Ortho-Meta** and **Para-Kresole** and **Coal Tar Creasote** offer no advantages. **Beech Wood Creasote** is less painful than the **Phenols**, but not so effective. **Anilin Oil** will destroy nodes, but is poisonous. **Oil of Cloves** attacks healthy tissue also. **Lysol** has to be further tried. **Cantharidinates** are being used hypodermically.

Unna recommends **Koch's Treatment** in extensive multiple cases, lupus fibromas associated with eyes, lips, nasal passages, auditory canal, etc.

LYMPHANGITIS.

Synopsis.—(Vol. 1892, p. 330.) Verneuil employs prolonged and frequently repeated applications of **Carbolic Spray.**

LYMPHATIC GLANDS (Enlarged).

Synopsis.—(Vol. 1892, p. 69.) **Silicate of Soda**, 5 to 15 drop doses in milk, for chronic enlargement.

MALARIAL HÆMATURIA.

Robert Saundby, M.D., F.R.C.P.

Dr. H. A. Hare has published a lengthy paper on this subject in which he embodies the results of an enquiry circulated among physicians practising in the more malarious districts of the United States. These show that malarial hæmaturia is common, that it is generally regarded as dangerous, as more common in males and most common between the ages of ten and forty-five. Great difference of opinion was shown as to its relation to **Quinine**, this drug being by many regarded as a cause of hæmaturia, while by others it was held to

be a useful remedy for it. The value of the paper is greatly diminished by the various forms of malarial hæmaturia being confounded together. Malarial fever causes nephritis, and hæmaturia due to this cause is necessarily a very serious condition, but hæmo-globinuria, which has not been differentiated in this enquiry, may occur with perfectly healthy kidneys, and may persist for years without doing much harm. The influence of quinine in causing hæmaturia appears to be peculiar to certain individuals and families; the fact is interesting, but its occurrence is not sufficiently common to make it the basis for any rule of practice.

REFERENCE.—"Therap. Gaz.," July 15, 1892.

MANIA.

Synopsis.—(Vol. 1892, p. 331.) **Hyoscine**, $\frac{1}{100}$ to 1 cmm., hypodermically, produced sleep in most cases.

MASTITIS. *Wm. J. Smyly, M.D., F.R.C.P.*

Boekel recommends excision by elliptical incisions, breaking down all partitions with the finger, cutting out all diseased tissue, washing out first with a 5 per cent. solution of **Chloride of Zinc**, then with 1 per cent. **Corrosive Sublimate** solution, drying with **Iodoform Gauze**, and stitching the cavity from the bottom. Antiseptic dressing and bandage are used, but no drainage. Dressings are removed in eight days. He reports six cases all healed by the first intention.

REFERENCE.—"Gaz. med. de Strasbourg."

MEASLES.

Synopsis.—(Vol. 1892, p. 331.) **Cold Baths** (76° F.) are successfully used even when eruption is fully out. **Tinc. Gelsemium**, 2 to 10 drop doses as antipyretic when fever affects cerebro-spinal system chiefly (p. 47).

MELANODERMA.

Synopsis.—(Vol. 1892, p. 332.) For melasma of pregnancy rub in twice daily: ℞ Cocoa Butter, Castor Oil, aā ʒxviij; Oxide of Zinc, gr. 5; Yellow Oxide of Mercury, gr. 2; Essence of Roses, q.s. to perfume.

MENINGITIS.

Synopsis.—(Vol. 1892, p. 333.) Barr advises the **Ice Cap**, free use of **Opium** for restlessness and cerebral excitement, and if there is fever 10 grains each of **Dover's Powder** and **Salicylic Acid** every three or four hours for an adult; he discards chloral and bromides, and strictly avoids alcohol.

In tubercular meningitis **Tapping** gave some temporary relief.

MENORRHAGIA.

Synopsis.—(Vol. 1892, pp. 24, 50.) **Tincture Cactus Grandiflorus**, 1 to 5 minims, combined with other remedies where palpitation is marked. **Tinc. Hydrastis** lessens pain and hæmorrhage.

MESENTERY (Cysts of).

Synopsis.—(Vol. 1892, p. 335.) **Salol Gauze** is safer for packing drained cysts than iodoform.

MIGRAINE. *Grœme M. Hammond, M.D., New York.*

For the actual attack of migraine, Dr. C. W. Suckling recommends that the patient should be confined to bed in a dark room, and a mixture containing 10 grains each of **Antipyrin** and **Ammonium Bromide** and 20 minims of **Sal Volatile** be given each hour, if necessary. In the intervals between attacks a pill should be given twice daily, each pill containing $\frac{1}{8}$ of a grain of **Indian Hemp** and $\frac{1}{10}$ of a grain of **Phosphide of Zinc**, and $\frac{1}{30}$ of a grain of **Arsenic.**

Peake recommends the following method in warding off an attack of migraine. When the prodromatic symptoms appear, the patient should be given 20 or 30 grains of **Guarana** in a little broth.

REFERENCE.—"New York Med. Journ.," Jan. 30, 1892.

Synopsis.—(Vol. 1892, p. 337.) Pearse gives **Succus Belladonnæ**, 15 to 20 minims, with **Chloral** 10 gr., every night at bed time. Landerbilco advises **Infusion of Green Coffee**, ʒvj daily on an empty stomach. Tincture of **Catha Edulis Leaves** (p. 30).

MOLLUSCUM CONTAGIOSUM. *T. Colcott Fox, M.B.*

Pick has succeeded by intraepidermal inoculations, made on a little boy and girl, in decisively settling the vexed question of the contagiousness of this affection. Nine out of twelve inoculations were successful. He concludes that: (1,) The contagiousness of the secretion of molluscum tumours is conclusively proved; (2,) The period of incubation lasts over two months; three or four months are necessary for their complete evolution; (3,) The neoplasms take their origin in the interpapillary epidermis, and there the molluscum corpuscles are found.

Meanwhile, the contagious agent is keenly sought. Neisser, though unable to furnish absolute proof, adheres to his theory that epithelioma (molluscum) contagiosum is a benign contagious disease due to psorosperms. He points to the contagiousness, inoculability, and sole implication of the epithelial cells as favouring this view. The "molluscum bodies" certainly closely resemble the coccidia from the rabbit's liver, and there is colloid degeneration of their contents, whilst both inside and outside the epithelial layer are bodies closely resembling coccidia and even spores. He does not think these bodies have a membrane, but even if they have (Török and Tommasoli) it is no disproof of their parasitic nature. Coccidia in cornifying cells and in succulent intestinal epithelium may behave differently, or these structures may not be coccidia, but another species of psorosperm. Touton says gregarinæ cultivated in bouillon blood serum show no signs of movement, and that encysted organisms (gregarinæ) resisted the action of sulphuric acid. Ehrmann, who agrees with Neisser,

related two most curious cases of inoculation by pus and pediculi. Boeck also thinks it parasitic, as the peculiar bodies in dispute begin within the cells. Török, who with Tommasoli, adopts the cell degeneration theory, points out that the structures supposed to be parasites lacked vitality, apparently, and could not be cultivated, whilst morphological and chemical differences had been demonstrated between them, and the acknowledged rabbit's psorosperms. He also attaches weight to the colloid-like chemical reaction of the bodies. Graham, of Toronto, describes an outbreak of fifteen cases in a cripples' nursery, apparently originating from one child. Inoculation experiments failed, but a micrococcus was isolated and cultivated. The tumours originated in the stratum mucosum. Macallum does not think the "corpuscles" are coccidia, but extruded or migrated eosinophilous nucleoli, composed of modified chromatin.

REFERENCES.—Pick, "Trans. Germ. Derm. Soc.," Congress iii. (quoted "Brit. Jour. Derm.," July, 1892, and "Archiv. f. Derm. u. Syph."); Neisser, idem and Inter. Cong. Derm. and Syph, 1892 (see discussion); Graham, "Jour. Cut. and Gen-Urin. Dis.," March, 1892; Ritsch, "Nordiskt. Med. Archiv.," xxiv., 1892 ("Jour. Mal. Cut. et. Syph.").

MONILITHRIX (Moniliform Hairs). *T. Colcott Fox, M.B.*

Dr. Wallace Beatty and Prof. Alfred Scott have reviewed all previously recorded cases, and described a new case of this curious diseased condition of the scalp, which is usually noticed from early infancy, and may be hereditary, or show family prevalence. It is characterized from papilla to free extremity by a regular succession of fusiform swellings, united by narrow alternations. The internodes appear to be the diseased portions, for they do not contain marrow substance, and the hair readily breaks in these regions. Many follicles in some cases are the seat of keratosis pilaris. Histologically the authors found nothing noteworthy in the fibrous coat or the prickle layer (external root sheath) of the follicles, or in Henle's layer of the internal root sheath. Where, however, the hair swells out into a node, Huxley's layer becomes narrow, and where the hair narrows to form an internode this layer becomes unduly thickened, but whether this condition is brought about mechanically is uncertain. The hairs are all of papillary origin. Pigment is present, and distributed with fair uniformity in both node and internode. The authors conclude that the papillæ over the entire scalp are forming nodes simultaneously, and at another time internodes. The nodes are not formed mechanically by the entrance of air. No evidence of causation by micro-organisms was forthcoming. The condition is probably due to some constitutional or nervous affection of central origin.

Lesser also noted a family with what he calls "moniliform intermittent atrophy of the hairs."

Sabouraud has also met with seventeen cases in the same family occurring in five generations. He thinks it a lesion of innervation, and could not isolate a parasite.

REFERENCES.—Beatty and Scott, "Brit. Jour. Derm.," June, 1892; Lesser, Congress of German Dermat., 1891; Sabouraud, "Ann. de Derm. et de Syph.," 1892.

MORPHINE HABIT. *Græme M. Hammond, M.D., New York.*

In a paper on the "Successful Management of the Morphine Habit," Dr. G. M. Hammond gives the following outline of his plan of treatment. The patient should be placed in a different room from the one he habitually occupies, and his clothing and all his effects should be kept from him. This effectually prevents his obtaining any morphine except that which his physician intends he shall have.

The use of the hypodermic syringe should be discontinued, and opium preferably in the form of morphine should be given in solution *per orem*. It is not advisable to allow the patient to know how much opium he is receiving at a dose, or to understand how rapidly the quantity is being diminished. This is not of much consequence at first, but when the dose reaches very small proportions, the patient becomes apprehensive of total deprivation, begins to worry, becomes nervous, fretful, and often develops insomnia.

When large quantities of morphine have been taken for a long time, the sudden deprivation, or the too rapid diminution of the quantity of the drug, is apt to be attended by serious results. The heart, the brain, and the digestive tract are kept stimulated by continuous doses of opium, and refuse to perform their functions without it. The dose of opium should therefore be gradually reduced, and the condition of the brain, the heart, and the bowels, should be carefully watched. If the morphine is being reduced too rapidly there will be hysteria, delirium, cardiac failure and diarrhœa. Besides these symptoms, pains in various parts of the body will be developed. The craving for morphine is one of the symptoms of the depressed action of the heart. To overcome this symptom the writer recommended the administration of 1 or 2 granules of **Glonoin** each containing $\frac{1}{100}$th of a grain of the drug. Inhalations of the **Nitrite of Amyl** also answer the same purpose.

A heart stimulant should always be given in place of the morphine. **Sparteine** and **Strophanthus** are the best remedies for this purpose. Sparteine is the better. It is bitter in taste like the morphine. It

can be added to the dose of morphine, and, by the similarity of its taste, conceals the fact that the quantity of morphine is being reduced. From ¼ to ½ a grain of sparteine should be given with each dose of morphine, or 7 to 8 drops of the tincture of strophanthus may be substituted for it. If there is insomnia (and there usually is) sufficient **Sulphonal** should be given to insure sound sleep. If there are pains of moderate severity, slight diarrhœa and loss of appetite, the patient can be made more comfortable by massage, rubbing the skin with alcohol, and by prohibiting solid food. Hot applications over the abdomen relieve nausea, pain and diarrhœa. If the symptoms are exceedingly violent, the quantity of morphine must be slightly increased for the time.

As a rule, the dose of morphine can be reduced by a ¼ of a grain a day until a daily quantity of from ¼ of a grain to ¾ of a grain is reached. From this point downwards it should be diminished more gradually, leaving off about $\frac{1}{10}$ of a grain a day. The after treatment of the patient is very important, and lessens the tendency to relapse. Outdoor exercise, pleasant companionship, entertaining literature, and pleasing amusements should be prescribed with the view of developing and strengthening the patient's mind.

REFERENCE.—"Denver Med. Times," July 1892.

Synopsis.—(Vol. 1892, p. 337.) Mattison uses **Bromide of Soda**, 30 grains twice daily, increased even to 100 or 120 grains in twenty-four hours, if required, followed by **Tonics**, **Rest in Bed**, and **Cannabis Indica** or **Bromide** and **Chloral** in full doses for insomnia.

MYOPIA. *William Lang, F.R.C.S.*

In a child ten years of age, with a myopia of 18 D and V = ⅙, Valude broke up the lens. The vision improved to ⅕, and ordinary reading could be carried on at 30 centimètres' distance. In treating these cases in this manner, it is of the greatest importance to select eyes having a fairly healthy fundus, otherwise the operation may be followed by detachment of the retina.

The importance of teaching children to sit upright whilst writing is admitted by all. By the general surgeon, as it prevents lateral torsion of the spinal column, and by the ophthalmic surgeon, as it diminishes the risk of myopia being produced.

Schubert has observed where vertical writing is taught that on an average a child sits with his eyes seven centimètres farther from the paper than one taught to slope his writing. Also that two thirds of the children keep body and head erect in the first group, whilst only a third sit correctly in the second group. He therefore concludes that all children should be taught to write vertically.

MYXŒDEMA. *P. Watson Williams, M.D., Lond.*

Two years ago we referred to the operation of grafting a sheep's thyroid gland on to the subcutaneous tissues of a cretinous child's chest, and in our last edition to M. Merklen's case of myxœdema, which was treated by grafting the lobe of a sheep's thyroid into the submammary region.

Since our last report E. Hurry Fenwick, Harris and Wright, Robin, Bettencourt and Serraud, and Macpherson have all been successful in grafting thyroid gland tissue. Messrs. Harris and Wright used the thyroid of a small green monkey, and as far as they could judge the operation did not afford any benefit to the patient. Messrs. Bettencourt and Serraud's case was that of a cretin, and beneficial results were claimed. All the other cases were myxœdematous, and in every one great improvement followed.

Mr. George Murray[1] presented a paper at the last meeting of the British Medical Association, in which he stated that, if we considered that myxœdema and cachexia strumipriva were due to the absence from the body of some substance which was present in the normal thyroid gland, and which was necessary to maintain the body in health, it was at least rational treatment to supply that deficiency as far as possible by injecting the extract of a healthy gland. Vessale's experiments with intravenous injections of an extract of that gland in dogs after thyroidectomy suggested the beneficial results that would follow similar injections, and in his paper the author reported the case of a lady, aged forty-six, who had suffered with myxœdema for five years, in which sterilized extract of sheep's thyroid was injected hypodermically with resulting improvement in all the symptoms of the disease.

His method, which he detailed at the meeting of the British Medical Association at Bournemouth, is as follows: The lobe of the thyroid gland of a sheep is excised as soon as possible after the animal has been killed, and the surrounding fat and connective tissue are removed from it. All the instruments and glass vessels used in further preparation of the extract should be either sterilized by heat, or thoroughly cleansed with a 1 in 20 solution of carbolic acid. The gland is cut into small pieces on a glass dish, and then placed in a test tube with 1 ccm. of pure glycerine and 1 ccm. of a 0·5 per cent. solution of carbolic acid. The mouth of the tube is closed with cotton wool, and the mixture allowed to stand in a cool place for twenty-four hours. The mixture is now placed in a fine handkerchief previously left for a few minutes in boiling water. It is then firmly squeezed, so as to express as much fluid through the handkerchief as possible. By this

means 3 ccm. of a turbid pink liquid are obtained. This preparation, which will keep quite fresh for at least a week, should be preserved in a small bottle with a glass stopper. It is best to make the extract fresh each week, so as to avoid any risk of putrefaction taking place. The extract may be given in two equal injections of 1·5 ccm. each during the week, so that at first the patient receives the extract of one lobe of a sheep's thyroid in the course of each week. After a time the injections need not be made so frequently. The injections are given with an ordinary hypodermic syringe, which is carefully washed out with a 1 in 20 solution of carbolic acid both before and after use; and the surface of the skin is also carefully cleansed with the same solution at the point of injection. The loose skin of the back between the shoulder-blades is a convenient site for the injection. At the end of three months, when the extracts of five lobes of sheep's thyroids had been injected, the patient was much improved in all the essential features of her malady, and Dr. Murray thinks that the improvement will be maintained if the treatment is continued every two or three weeks.

Fig. 55.—M. H. A., October, 1891. Before treatment.

Fig. 56.—M. H. A., June, 1892. After treatment for seven months.

We are able to give illustrations of one of Mr. Murray's cases. (*Figs.* 55 and 56.)

The thyroid juice injections have given excellent results in cases reported by Davies, Claye Shaw, Hearn, E. Hurry Fenwick, Beatty Carter, Napier and Robin, and many others. The only failures we have heard of, are two cases in which they were tried

by Dr. J. Michell Clarke ; but no full report of his cases has been published.

In several cases abscesses have formed at the seat of injection, and in others inflammation occurred without suppuration, though in all the utmost precaution was taken to secure asepsis. Consequently, it has been suggested that eating the thyroid gland might be productive of the same good results as the injection of the juice hypodermically.

On October 22nd, 1892, we began the treatment of a well marked case of myxœdema, with **Thyroid Gland** finely minced in a thin sandwich, and by Nov. 9th, she had lost all symptoms of the disease. On Oct. 29th, cases of myxœdema, successfully treated by feeding with thyroid gland or extract of thyroid gland, were reported by Dr. Hector Mackenzie and Dr. E. L. Fox, and Mr. E. Hurry Fenwick. The thyroid gland sandwiches are repugnant to some patients, and, moreover, have to be obtained fresh from the butcher on each occasion, and this is not unfrequently a matter of great difficulty. We have found that the following mixture, in the method of preparing which we have been greatly aided by Mr. Kilner, Dispenser to the Bristol Royal Infirmary, is an efficient and pleasant method of administering the extract. It is free from the disagreeable taste of phenol, and yet keeps fresh a considerable time. The lobes of thyroid glands are ground up with a small quantity of sterilized sand, and extracted with ʒss of glycerine, ʒss of distilled water, and grs. iv of boric acid to each lobe. This extract is then filtered under a pressure of 400 mm. of mercury, and chloroform water to make a fluid ounce is added to the filtrate. The dose is ʒss twice a week, to be taken with two teaspoonfuls of brandy. All the vessels and utensils are washed with lotio acidi borici.

Some caution must be observed in administering the thyroid extract, as it appears to be a very potent remedy. In one case, complicated with a feeble heart, death occurred. Too frequent administration of the remedy renders the pulse very rapid and weak.

REFERENCE.—[1] "Brit. Med. Jour.," Oct. 10, 1891.

NERVE STRETCHING. *Græme M. Hammond, M.D, New York.*

Nerve stretching as a therapeutic agent, was the subject of a recent paper by Dr. Archimede Mischi[1]. The writer comes to the following conclusions : (1,) The influence of nerve stretching is felt as far as the nervous centres, particularly in the medulla oblongata. A paralysis of sensation, with relative conservation of motility, is produced ; (2,) Nerve stretching is an efficacious method of treatment in those cases in which the lesion is peripheric. Hence, it is most useful in the treatment of the various neuralgias, tic douloureux, spasms, traumatic

contractures and reflex epilepsy; (3.) It must be condemned in tabes dorsalis and various affections of the medulla oblongata, in which it is never successful, often injurious, and, finally, sometimes fatal; (4.) It offers but very slight probability of success in the treatment of tetanus.

REFERENCE.—"Ann. of Surg.," Nov. 1, 1891.

NEURALGIA. *Græme M. Hammond, M.D., New York.*

Malherbe[1] states that he has obtained very good results from the employment of **Cocaine** hypodermically for neuralgia, in one of the following formulæ: —

℞ Hydrochlorate of Cocaine gr. xv | Water ℥vj

Or,

℞ Hydrochlorate of Cocaine gr. xv | Distilled Water ℥vj
Boric Acid gr. viij |

Or.

℞ Neutral Glycerin ℥j to ij | Hydrochlorate of Cocaine gr. xv

The skin should be raised up immediately over the seat of pain, and 1 drop of the solution injected. The tender nerve is then found by the pain which is elicited by gently moving the needle about in the tissues which have been made anæsthetic by the first drop, when several more drops are placed directly in contact with the nerve fibres.

Dr. J. J. Putnam[2] has examined, in all, ten nerves from eight persons who were operated upon for facial neuralgia, and in all but three of them more or less marked changes were found. The changes noticed were those commonly observed to accompany neuritis. He is therefore a strong advocate for the operative treatment of tic-douloureux, and he believes that in severe chronic cases no other form of treatment will prove effectual.

REFERENCES.—[1] "Therap. Gaz.," May 16, 1892; [2] "Lancet," Oct. 17, 1891.

Synopsis.—(Vol. 1892, p. 341) Bœquilon uses **Butyl Chloral**, 15 gr. in solution once or twice daily, and Hare combines it with **Tinc. Gelsemium**, 10 or 15 drops, or with **Antipyrin**, **Caffeine**, and **Cannabis Indica**. **Removal of the Gasserian Ganglion.** Aulde recommends **Arsenic** (p. 19). De Brun gives **Cinchonidine Sulphate** in doses about a third greater than **Quinine** (p. 33).

NEURASTHENIA. *Græme M. Hammond, M.D., New York.*

Constant Paul[1], in the "Med. Chirurg. Bundschau," reports three cases of chlorotic neurasthenia, three cases of simple neurasthenia, and several cases of ataxia, which were treated by hypodermic injections of an extract made from the gray substance of the brain of sheep, macerated for twenty-four hours in glycerine and water. The dose for the first injection was 1 cm., gradually increased to 5 cms,

twice weekly. The injections caused no local trouble. The improvement was gradual. The appetite, strength, and body weight increased. The benefit from the treatment was so marked that the author recommends it in other obstinate nervous diseases.

REFERENCE.—"Journ. Nerv. and Ment. Dis.," Sept. 1892.

Synopsis.—(Vol. 1892, p. 342.) Hydrotherapy, Iron and Potassium Bromide in mild forms. Weir-Mitchell Treatment in severe cases. Where intestinal torpidity is present, an Abdominal Belt should be worn, and the bowels kept regular. Bicarbonate of Soda or Vichy Water to produce alkalinization; Cold Douches for twenty or thirty seconds. Faradism to sensitive areas for local pains; Statical Electricity. Kola Extract, 15 to 40 drop doses.

NOSE (Diseases of). (See also "Septum, Nasal.")

J. Dundas Grant, M.D., F.R.C.S.

Rhinitis Catarrhal.—The medical profession has been often taunted with its incapacity to "cure" a simple "cold in the head." It cannot be charged with neglecting to provide methods of treatment. Lederman[1] cleanses the passages with an antiseptic spray, and then applies the following solution :—

℞ Cocain, Menthol āā gr. xx | Benzoinal ʒij.
M. Ft. solutio.

The temporary beneficial effect of cocain is well known, and the addition of menthol is for the purpose of making it more lasting. Another treatment is the inhalation of the fumes obtained by heating 15 grains of powdered **Oxynaphthæic Acid.**[2] This substance is derived from α-sodium-naphthol, and is said to possess five times the antiseptic energy of salicylic acid.

A similar material, **Naphthaline**[3] (best known as the albo-carbon used in some gas-lights—Ed.), is employed thus :—

℞ Naphthaline (in an impalpable powder)	ʒvj	Powdered Camphor	gr. xv
		Extract of Violets	gr. xv
Powdered Boric Acid	ʒvj	Essence of Roses	gtt. xx

Sig.—Mix and use as a snuff in coryza.

Dr. Capitan[4] recommends for aborting an acute coryza, the insufflation of the following powder into each nostril :—

℞ Salol	gr. xv	Acid. Tann.	gr. ij
Acid. Salicyl.	gr. iij	Acid. Boric. (pulv.)	ʒj

The carbolic acid liberated from the salol is irritating, so it must not be used for more than half a day, after which a snuff of powdered **Talc** and **Boric Acid** may be substituted. Instead of the salol compound, the following may be continuously and frequently used, being both efficacious and unobjectionable :—

℞ Pulv. Talc	gr. lxxv	Acid Boric (pulv)	gr xxx
Antipyrin	gr. xv	Acid Salicyl.	gr. iv

The continuous application of a lasting sedative antiseptic seems to be the ideal local treatment, and those above quoted will no doubt commend themselves to practitioners. In what we may call an "accidental" attack in a generally healthy individual, it would be inhuman to withhold the unspeakable relief afforded by the application of a weak solution of **Cocain.** We would associate with it the use of such a spray solution as: Menthol, Camphor, āā gr.j (rubbed together to form a liquid), Ol. Eucalypti, ℥v, Parolein (or one of the pure unirritating paraffin oils), ℥j, employed frequently by means of a nasal ointment atomiser, such as Messrs. Burroughs and Welcome have introduced into this country. The rational constitutional treatment, both pharmaceutical and hygienic, is an indispensable adjunct to the local medication. We are not justified in omitting either. In cases of obstinate or recurring coryza, an investigation of the nasal cavities is all-important. Swellings of the mucous membrane of a quasi-erectile character are frequently found, and Bosworth[5] speaks enthusiastically of the advantages of the judicious application of fused chromic acid to the seat of the greatest swelling, after it has been caused to shrink by means of cocain, and dried by means of absorbent wool. The tip of a probe, coated with the fused acid, is applied for a few moments to the desired spot, and if the drying has been thoroughly effected the tendency to diffusion is minimised. The mucous membrane is more or less "pinned-down," and nose-breathing becomes continuously possible. Points of contact between the turbinated bodies and the septum are fruitful sources of irritation from the collection of discharges at the seat of constriction.

Dr. Middlemiss Hunt[6] narrates cases in which symptoms so severe as to simulate malignant disease or syphilis of the nose, arose simply from the retention of discharge behind a fold of hypertrophied œdematous mucous membrane. Complete relief followed local cleansing, and permanent cure was effected by galvanic cauterization of the fold.

Rhinitis (Hypertrophic) and Polypus.—Dr. Greville MacDonald, in the "Annual" for 1891, gave a description of an excellent cold-wire snare of his own design, which is most convenient for the removal of redundant folds of mucous membrane from the nose. It is similar to one devised by Dr. Woakes to do the work for which Jarvis's snare has been so much used. The pistol-handle employed in the former instrument has lately been adapted by Jarvis[7] to his own snare. This certainly facilitates the manipulation materially. Dr. Sajous[8] has improved Jarvis's snare in another direction, by having inside the tube a rod with an eye at its distal extremity. A small loop of wire is made, and its two ends are passed through this eye. The loop can thus be

protruded or retracted by means of the rod, and fresh wire can be adapted with much greater facility than in the original instrument. These various instruments have to a great extent displaced the galvano-cautery loop. The latter seems to have only one advantage, namely, the diminution of the chance of hæmorrhage. To prevent this with the cold snare the tightening must be accomplished very slowly, and with the galvano-cautery snare it is equally necessary that the heat should be the very dullest compatible with the destruction of tissue, otherwise it is no better than the other. A shortening of the time of operation is one slight gain, and the absence of the final tug is another. If cauterization diminishes the chance of recurrence (which is not certain in comparison with otherwise complete removal), it is easy to cauterize the site or stump by means of the galvano-cautery after removal by the cold operation. Steel piano-wire is preferred to platinum wire as being cheaper, firmer, and more easily heated. If platinum is used, its softness can be neutralized by the coaptation of a loop of steel wire, to which it is fixed by means of fine silk threads. It is then passed over the growth, and when the current is turned on, the silk is burned through, so that the platinum loop can be tightened.

Rhinitis (*Atrophic*).—Various methods of irritating the nasal mucous membrane have been introduced of late with a view to curing this affection. Dr. Meijer[9] uses a **Nitrate of Silver Spray.** He first packs the anterior nares with dry cotton for twenty or thirty minutes to remove crusts and mucus. Then he sprays the interior with a 2 per cent. solution of the nitrate. The strength of the spray is increased daily, till at the end of four days a 15 per cent., and at the end of eight a 25 per cent., solution is employed and continued for a week. The treatment is then gradually slackened off till crusts cease to form, which is usually a matter of a few weeks. **Aristol** insufflations are recommended by Prof. Bürkner.[10] He is also in favour of the **Acetico-tartrate of Aluminium,** or a combination of the two. Aristol seems to combat the fœtor more directly. The powdered acetico-tartrate of aluminium is usually insufflated twice a week only, as it sets up a good deal of irritation. It was strongly recommended by Victor Lange.[11] Dr. Bronner's[12] treatment consists in the application of a 10 to 50 per cent. solution of **Trichlor-acetic Acid** to the turbinated bones and septum by means of cotton wool twisted on a probe. This is done by the surgeon twice or thrice a week (under cocaine), and in the intervals the patient uses an alkaline douche, to which may be added a little acetico-tartrate of aluminium. He also recommends a snuff of the latter combined with menthol, camphor, and boric acid, to which

aristol or europhen can be added. **Europhen** has been found very useful by Dr. Chappell,[11] of New York. He cleanses the nose with ½ per cent. solution of creolin, and then blows in powder of europhen so as to cover the parts. The discharge becomes yellow, and then watery, and the mucous membrane red and puffy. **Blistering Fluid** has been applied with success by Dr. Hunter Mackenzie, as a means of keeping up a species of self-irrigation in the nose.

In all cases much depends on the preliminary cleansing, whatever form of irritant be employed. A coarse spray, or anterior douche, is seldom sufficient. Every scrap of crust must be cleared away under good illumination by means of posterior as well as anterior douches, and above all by the application of pledgets of cotton wool on wire holders. A douche of soda bicarbonate and carbolic acid, sanitas, listerine or permanganate of potash must be freely used night and morning; a stimulating antiseptic powder, such as those already quoted, or the well-tried **Compound Menthol Powder** (Menthol 5ij, Ammon. Chlor. 5iij, Acid. Boracici ad 5j), snuffed into the nose several times a day, and each nostril plugged on alternate nights with cotton wool. To this generally applicable mode of treatment any of the others quoted may be superadded.

REFERENCES.—[1] "Brooklyn Med. Journ.," Dec., 1891, and "Therap. Gazette," Jan. 15, 1892; [2] "Pharmaceutische Post," July 19, 1891, and "Therap. Gaz.," Oct. 15, 1891; [3] "L'Union Médicale," 1892, and "Therap. Gaz.," May 16, 1892; [4] "La Médecine Moderne," Nov. 12, 1891, and "Therap. Gaz.," Feb. 15, 1892; [5] "Text-Book of Diseases of the Nose and Throat," vol. i. p. 116; [6] "Journ. of Laryngol.," Jan., 1892; [7] "Med. Rec.," March 5, 1892; [8] "Diseases of the Nose and Throat," 1890, p. 106; [9] "Hospital Gazette," May 7, 1892; [10] "Berlin. klin. Woch.," No. 26, 1891; [11] "Monatschrift fur Ohrenheilkunde," No. 10. 1885; [12] "Journ. of Laryngol.," Sept., 1892; [13] "Med. Rec.," April 23, 1892.

ODONTALGIA.

Synonyms.—(Vol. 1892, p. 28) **Camphor Carbolate as a local anæsthetic**

ŒSOPHAGUS (Impacted Foreign Bodies in). *F. S. Eve, F.R.C.S.*

Dr. A. G. Gerster strongly advocates early operation in such cases. If a foreign body becomes lodged in the œsophagus, and cannot be displaced downward into the stomach, or extracted without the employment of much force, it is imperative to perform œsophagotomy at once. With the exception of cases in which a goitre or cervical tumour impedes the otherwise simple steps of the operation, the procedure as now practised is comparatively safe, its rate of mortality for all cases, recent and old, good and bad, being computed by Fisher as 20 per cent. The conditions are parallel to

those existing in strangulated hernia. *An early operation is safe; a late one dangerous, and very often useless.* Delay extending over twenty-four hours is never justified, and if at the end of this period extraction by bloodless processes is not easy, the gullet ought to be opened at once.

Tedious and often-repeated attempts at dislodgment in a case where impaction has been present for more than twenty-four hours, are apt to be more dangerous than œsophagotomy. The patient's general condition is usually bad from fever and starvation, and the depressing effects of the manipulations in the fauces and œsophagus, productive of nausea and vomiting, are not to be slighted. Finally, the further injuring of the mucous membrane in the presence of septic ulcerative processes or sloughing, and the probability of causing *traumatic* perforation, are to be well weighed.

After removal of the foreign body Gerster recommends that in the absence of septic complications—and this may be fairly expected in cases receiving early attention—the edges of the œsophageal wound should be stitched at once with fine silk. The outer wound is to be packed loosely with iodoform gauze. A few silkworm-gut stitches may be inserted into the cutaneous edges of the wound, which however, is to be closed only after the removal of the packing. In these cases alimentation by the mouth can be commenced at once with liquid substances, and the patient should swallow very small quantities, and while lying on the right side. Minute leakage will often occur, but will not interfere with the rapid healing of the wound. In those cases where ulceration or sloughing has occurred, suture is often impracticable, and rarely safe. The open method by packing is indicated, and large defects may necessitate the use of the stomach-tube, which can be inserted through the wound, or by the mouth or nares.

REFERENCE.—"Annals of Surgery," May, 1892.

ŒSOPHAGUS (Stricture of). *P. Watson Williams. M.D., Lond.*

Chappell states that he has found prolonged **Tubage** of the œsophagus useful in traumatic and in hysterical cases. In the former the presence of a short silk gum elastic tube at the seat of stricture, in the intervals between the passing of the bougies, hastens the restoration of the calibre of the œsophagus; the tube left in should be a little smaller than the corresponding bougie. In a case of nervous or hysterical stricture a soft rubber tube was retained in the œsophagus for two weeks, with the result that the patient remained free from symptoms for a month; they then recurred, but after tubage for another week she made a complete and permanent recovery. Swallowing in such cases takes place not only through, but also around the

tube. The position and size of the stricture must first be ascertained in all cases by means of bougies. The œsophagus is cleaned by making the patient swallow antiseptic fluid, and 2 or 3 teaspoonfuls of a 1 per cent. solution of **Cocaine** are taken. Chappell makes use of Symond's whalebone introducer, but brings the thread out through the nose, as he finds that, if brought out the mouth, it causes much salivation and discomfort. The soft rubber tube can be introduced with the finger and a bougie. The tube ought to be removed for cleansing every two weeks; in malignant stricture oftener at first, as dilatation commonly follows the intubation.

REFERENCE.—"New-York Med. Rec.," Feb. 20, 1892.

OPHTHALMIA (Infantile).

Synopsis—(Vol. 1892, p. 343.) Nitrate of Silver solution 2% instilled directly after birth, and washing eyes with 1 to 2000 Sublimate Solution. Vaginal Injections and Hygienic Measures prior to parturition. If lids are swollen Cotton Pledgets dipped in Iced Water may be applied, or cleansing them hourly with Van Swieten's Solution. 4 or 5 drops of ℞ Sulph. Neutral Eserini, 10 grammes, Aq. Destil. 20 grammes, may be instilled into each eye night and morning. The conjunctival surface may be daily touched with 1 to 50 Nitrate of Silver Solution. Schmidt-Rimpler instils Officinal Solution of Chlorine.

OPHTHALMIA NEONATORUM. *William Lang, F.R.C.S.*

At Giessen, the treatment pursued by Kaltenbach, and with great success, consists in a simple washing of the interior of the lids with **Distilled Water.** This means of prophylaxis has given better results than any other.

Henry Dwight Chapin, M.D., New York.

Dr. Schneideman advocates the following treatment: The attendants should remove the pus once every hour during the height of the disease. This can be done by gently separating the lids and flooding the conjunctival sac repeatedly until the cleansing fluid returns clear and unmixed with pus. A strong solution of **Bichloride of Mercury,** 1 to 2000, is employed. To modify the inflamed membrane, a solution of **Nitrate of Silver,** 10, 20, or even 40 grains to the ounce, should be applied once or twice in the twenty-four hours to the everted lids by the surgeon. No subsequent washing with sodium chloride solution is necessary.

REFERENCE.—"Med. and Surg. Reporter," Jan. 23, 1892.

OSTEOMALACIA.

Synopsis—(Vol. 1892, p. 355.) Hofmeier and Fehling advise Oophorectomy in females.

PANCREAS (Surgery of). *A. W. Mayo Robson, F.R.C.S.*

Cysts.—Although its mode of action is not quite clear, injury is the only cause of cyst formation established with certainty. During the

past year I have seen two cases of pancreatic cyst so caused. One admitted into one of my beds in the Leeds Infirmary and operated on in my absence by Mr. Littlewood,[5] was reported at the Clinical Society; the other case under the care of a colleague developed some weeks after the accident, but was clearly dependent on traumatism.

Krecke[3] considers that some significance must be attributed to catarrh spreading from the bowel to the duct and causing obstruction. The exact position of the tumour depends on the part of the pancreas involved. It is a retro-peritoneal fluctuating tumour, coming forward generally between the stomach and transverse colon, and surrounded in a characteristic fashion by tympanitic resonance. Sometimes it may present above the stomach or below the colon; in the first instance the dulness would be continuous with that of the liver. Its contents are alkaline, dark brown in colour, and possessing the digestive properties of pancreatic fluid. Exploratory puncture is rarely necessary, and is not without risk. The symptoms are chiefly due to the pressure of the tumour, and also in less degree to the absence of the pancreatic juice. The attacks of colic are perhaps due to the pressure on the cœliac plexus. Jaundice may be caused by pressure on the common bile duct. Wasting is very common. The duration of pancreatic cysts has been known to be very prolonged. Their size depends on their age. Very large cysts may give rise to much difficulty in diagnosis. These cysts must be distinguished from ovarian and from renal tumours, from hydrops of the gall bladder with attacks of colic, as well as from aneurysm and deep-seated suppuration. The results of treatment by incision and drainage have been very good. A fistula occasionally remains, but this may subsequently heal up. Out of twenty-seven cases thus treated, all recovered; three died some time later of diabetes, phthisis, and intestinal obstruction respectively. Extirpation of the cyst would appear to be accompanied by very considerable risk, for out of six such cases three died.

The diagnosis of cancer of the pancreas is of importance, as it produces symptoms not unlike those of obstructive jaundice due to gall stones. The jaundice is present from the beginning of the disease, and, as a rule, develops gradually and without pain. Fat in the fæces and sugar in the urine are also facts of great value, and the presence of a tumour occurs only quite late in the disease.

Dr. Flavio[6] calls attention to a symptom as yet unobserved in this disease, namely, the presence of chylous ascites, which he has observed in two cases.

It has for some time been known that the pancreas has other functions than those of secreting a fluid necessary to digestion. To

prove this M. Hédon,[1] of Montpellier, has for some time past been studying the effects of grafting the pancreas of the dog under the skin of the abdominal parietes. His method consists in drawing out the greater part of the gland and fixing it in the subcutaneous tissue, without interfering with the vascular connection between the extruded portion and the part still remaining *in situ*. After the lapse of a few days, this pedicle is cut, and the grafted gland generally continues to live in its abnormal situation. During the first few days of the extra-abdominal existence, the organ swells up, and a tumour is formed which is filled with a clear colourless liquid, the pancreatic juice, in fact. The sac having been emptied a few times, there only remains a fistula through which the liquid continues to flow. Later on, the fistula closes and the graft continues to live, its secreting powers having been suppressed. When the graft is examined, no departure from the normal structure of the pancreas is discernible. In the animal arrived at this stage of the experiment there exist then an intra-abdominal and an extra-abdominal pancreas, of which the former remains in connection with the intestine, pouring into it its characteristic secretion, the pancreatic juice. The extra-abdominal pancreas has ceased to be a secreting organ and has acquired the functions of a vascular gland. Pushed still further the experiment yields most instructive results. The removal of the intra-abdominal pancreas alone is not at all injurious to the dog's health, the urine being normal both in quantity and constitution. When, however, the subcutaneous organ is, in addition, removed, the animal becomes quickly diabetic, the quantity of urine passed being greatly augmented and containing a notable proportion of glucose. Death ensues rapidly. These interesting experiments go to prove that over and above its digestive functions the pancreas is useful and even necessary in other ways.

Dr. Vaughan Harley[7] draws the following conclusions with regard to pancreatic diabetes: (1,) The sugar met with in the urine of patients suffering from pancreatic diabetes is probably due to the absence from the circulation of a sufficiency of normal pancreatic glycolytic ferments; (2,) The tissue waste and muscular weakness mainly spring from the retention in the organism of certain excrementitious substances, which, by forming toxic leucomaines, act as poisons and interfere with the normal nutrition of the tissues of the body, and in so doing give rise, as other toxic substances do, to functional disturbances and even death.

REFERENCES.—[1] Hédon, The Functions of the Pancreas, "Gazette Médicale de Paris," Aug. 13, 1892; [7] Seegen, The Pancreas and Diabetes, "Lancet," June 18, 1892; [7] Krecke, Pancreatic Cysts,

"Brit. Med. Jour.," July 23, 1892 ; [4] Musineci, Cancer of Pancreas, "Annals of Surgery," Dec., 1891 ; [5] Littlewood, Traumatic Cyst of Pancreas, "Lancet," April 16, 1892 ; [6] Flavio, Chylous Ascites and Cancer of Pancreas, "Annals of Surgery," Dec., 1891 ; [7] Vaughan Harley, Pancreatic Diabetes, "Brit. Med. Jour.," Jan. 22, 1892, and Aug. 27, 1892.

PARALYSIS AGITANS. *Græme M. Hammond, M.D., New York.*

Hypodermic injections of **Atropine** are strongly recommended by M. Moretti[1] in the treatment of paralysis agitans. The doses used by him varied from $\frac{1}{60}$ to $\frac{1}{30}$ of a grain. These injections, repeated once every twenty-four hours, brought about a notable diminution in the tremor, and a certain re-establishment of the motor power. It was observed, however, that the tremor returned when the injections were suspended. The remedy is well borne, and can be continued for an apparently indefinite time. One patient received as many as a thousand injections, each of $\frac{1}{30}$ of a grain daily.

REFERENCE.—[1] "Lancet," Dec. 19, 1892.

Synopsis.—(Vol. 1892, p. 357.) Peterson recommends a pill containing $\frac{1}{2}$ to 2 grs. of **Codeine** with $\frac{1}{100}$ gr. **Hyoscine Hydrobromide**.

PEDICULOSIS. *T. Colcott Fox, M.B.*

Nedzwiecki states that pediculi capitis and pubis, and the nits, are killed almost instantaneously by a free bathing for a few minutes with ordinary commercial **Benzin**. A single dressing usually suffices, the smell quickly goes off, and even where the scalp is inflamed, only slight pain is caused. This substance is extremely inflammable.

Thibierge notes two cases of pediculosis vestimentorum in two men living under miserable circumstances, in which the skin was deeply pigmented, so as to simulate Addison's disease (vagabond's disease). As in two other cases reported by Greenhow and Besnier, there were numerous brown, sharply-defined, and irregularly distributed patches on the mucous membrane of the mouth. In one case the face was slightly pigmented, in the other the scrotum, and in both the glans.

Julien records a remarkable case in a girl aged seventeen, in whom there were lice in the scalp, on the pubes, axillæ, and eyebrows and eyelids. From the references he gives, this condition was apparently much more common in former times. Lice on the eyelids seems to be peculiar to children. The lice were attached to the base of the hair, with the rostrum and head imbedded in the follicle, presenting to the view their posterior aspect. The proper treatment consists in the patient extirpation of all the parasites and eggs with forceps. Trouessart also observed a case in which an infant's eyelids were

crowded with nits of the phthisius inguinalis, and, still more remarkable, this parasite was noticed in the scalp, but had no laid eggs there.

REFERENCES.—Nedzwiecki, quoted "Brit. Med. Jour.," Jan. 2, 1892; Thibierge, "Bull. et Mém. de la Soc. des Hôp. de Paris," Dec. 18, 1891; Julien, "Jour. des Mal. Cut. et Syph.," Jan., 1892; Trouessart, quoted "Jour. des Mal. Cut. et Syph." Mar., 1892.

Synopsis.—(Vol. 1892, p. 357.) Brocq employs 1 part Sublimate in 500 of Vinegar to destroy nits. Fournier advises Bathing, followed by Inunction of Mercurial Ointment, 3j or 3ij, washing with Soap and Water two hours after, Changing Underclothes and Bed Linen, and Fumigating outer clothes with Sulphur. Alternatives are Calomel Ointment, 5%, Mercurial Baths, or Corrosive Sublimate lotion, *e.g.*, R Corrosive Sublimate 1 part, Alcohol 100, Water 400 parts; or R Corrosive Sublimate 1 part, Vinegar 600. Nits are destroyed by Vinegar slightly diluted, and a Metallic Comb is used.

PEMPHIGUS NEONATORUM. *T. Colcott Fox, M.B.*

Jüvorsky describes an epidemic attacking twelve infants (four deaths) of the poorer classes in a certain district of St. Petersburg, all of whom were attended by the same widwife. The epidemic ceased with the discontinuance of the midwife's services. The disease commenced on the fourth, fifth, or sixth day of the infant's birth with a bleb somewhere on the upper half of the body Subsequently, vesicles and bullæ from a pin's head to the palm in size appeared in crops, but never on the soles. The conjunctivæ were involved in one case. Rectal temperature, 37·5° C. to 38° C. Duration of the affection, one to three weeks. In two cases the bullous eruption attacked older brothers and sisters and the mothers.

Almquist records an epidemic affecting one hundred and thirty-four out of two hundred and sixteen children in the Lying-in Hospital at Göteberg. Two mothers who nursed their children were affected on the mammæ. In nine cases investigated, a coccus, very like staphylococcus aureus, was isolated, and the author raised bullæ on his own arm by the inoculation of pure cultures.

REFERENCES.—Jüvorsky, "Vratch," 1891, p. 387 ("Brit. Jour. Derm.," Nov., 1891); Almquist, "Arch. f. Derm. u. Syph.," Heft 2,. 1892 ("Brit. Med. Jour." Supplement).

PERICARDITIS.

Synopsis.—(Vol. 1892, p. 358) Paracentesis and Irrigation of the pericardium have been successfully used to remove fluid or pus.

PERITONITIS. *A. W. Mayo Robson, F.R.C.S.*

Although peritonitis without a local cause is extremely rare, there can be little doubt that it does occasionally occur, just as idiopathic inflammation may occur in a joint or in the pleura or pericardium, but

how extremely rare it is, is well shown by a reference to Dr. Kelynack's[1] published tables.

From the records of two thousand eight hundred and fifty-five post-mortem examinations, one hundred and twenty-four cases of acute peritonitis are recorded; ninety-four among five hundred and ninety-seven "surgical" cases, thirty among two thousand two hundred and fifty-nine "medical" cases. Of these one hundred and twenty-four cases, eighty-four occurred in males, and forty in females. These one hundred and twenty-four cases may be thus grouped :—

(1) Traumatism - - -	13	Gastrostomy - -	2
(2) After operations—		Excision of rectum -	1
Herniotomy - -	22	Cystotomy - -	1
Laparotomy - -	9	Lithotrity - - -	1
Gynecological - -	8	Nephro-lithotomy -	1
Colotomy - - -	7	External urethrotomy	1
Excision of cæcum -	3	Total —	56
(3) Associated with—		Uterine myomata -	1
Hernia—strangulated	4	Suppuration of mesenteric glands -	1
Intestinal obstruction	4	Suppuration in tunica vaginalis - -	1
Disease of liver - -	4	Stricture of colon -	1
Disease of kidney -	3	Stricture of urethra; extravasation- -	1
Hernia—irreducible -	2	Septicæmia - -	1
Enteritis - - -	2	Total —	29
Disease of pancreas -	1		
,, spleen -	1		
,, ovary -	1		
,, prostate -	1		
(4) From perforation of—		Stomach - - -	3
Appendix - - -	7	Sigmoid - - -	1
Small intestine - -	7	Cæcum - - -	1
Duodenum - -	4	Total —	2
Rectum - - -	3		

The importance of these statistics lies in the fact of the lesion being practically in all the cases, local at first, and therefore amenable to treatment, whereas when the peritonitis has become diffuse, surgical treatment holds out small hope. J. W. Southam,[2] however, publishes a case of acute suppurative peritonitis, successfully treated by laparotomy and drainage, and I[3] have also reported a successful case treated on similar lines.

Dr. Lydston[4] believes that in the majority of cases of so-called "idiopathic" peritonitis in children, the cause will be found to be traumatic.

Mr. Edmund Owen[5] reports a good example of traumatic peritonitis without visceral rupture, in which abdominal section was followed by cure.

At the German Surgical Congress Hr. W. Körte gave an address on

this subject based on his experiences in the treatment of nineteen cases, six of whom recovered. The cases were not selected, but included all he had had under his care in the Urban Hospital during the past two years. The cases of gangrene of bowel after hernia or internal strangulation and those of tubercular peritonitis were not, however, included in the list. What could the surgeon do in suppurative peritonitis? (1,) Evacuation of the pus, although not everything, was still the most that could be done. Disinfection of the abdominal cavity he held to be impossible, and it should not, therefore, be attempted; (2,) Removal of tension in the abdominal cavity, whereby respiration and circulation were rendered easier; (3,) Closure of the perforation opening in many, but not all cases; (4,) Removal of excretion by drainage.

Of the three forms of peritonitis, the septic without much exudation and with paralysis of intestine was not amenable to surgical treatment, as the general sepsis overweighted all. But surgery could do something in the purulent form without adhesions, and also in the purulent form with adhesions (acute progressive suppurative form of Mikulicz). This form afforded the best prospects. The speaker's investigations were not made in cases of circumscribed sacculated peritonitis, but upon progressive fibrinous suppurative general peritonitis. He had satisfied himself at operations that even if the pus lay in large closed cavities, the whole peritoneum was inflamed. Differential diagnosis of the individual forms was difficult, the distinction between ileus and general suppurative peritonitis was not possible in all cases.

Recurrent peritonitis is usually dependent on some local cause, which is frequently removable by surgical means. During the past year I have operated successfully on four varieties of recurrent peritonitis: (1,) Recurrent appendicitis, the inflammation being dependent on catarrh of the vermiform appendix, the treatment being removal of the appendix; (2,) Inflammation in the neighbourhood of the gall bladder, cured by removal of gall stones from the bladder or ducts; (3,) Local peritonitis around the pylorus dependent on adhesions set up by ulcers of the pylorus long since healed, cured by separation of the adhesions; and (4,) Pelvic peritonitis with frequent recurrences, dependent on disease of the Fallopian tubes and cured by removal of the cause.

On the last-mentioned cause an interesting discussion took place at the London Obstetrical Society in October and November, 1892, the subject being introduced by Dr. Cullingworth,* who reported fifty cases. He suggested the following conclusions as the outcome of his experience: (1,) Recurrent attacks of pelvic peritonitis in the female ought always to lead to a strong suspicion of the existence of

chronic disease of the uterine appendages, and to careful bimanual examination ; (2,) Purulent collections in the pelvis are particularly apt to set up recurrent peritonitis, and are more common than is usually supposed ; (3,) Where distinct swellings are found in the posterior quarters of the pelvis, in connection with recurrent attacks of pelvic peritonitis, surgical relief is usually indicated, and, generally speaking, the sooner such relief is afforded the better ; (4,) Purulent inflammation of the mucous membrane of the Fallopian tube differs from purulent inflammation of other mucous membranes in the absence, owing to the anatomical situation of the Fallopian tubes, of a natural outlet for the pus. A very slight amount of swelling of the mucous membrane suffices to block the tube at its uterine end, and if pus be present in the tube, it must then either remain pent up in the tube, or be poured out through the fibrinated end into the peritoneum, in either case becoming a source of danger ; (5,) Salpingitis being a painless affection, the wall of a pyosalpinx may be on the point of perforation before an acute attack of peritonitis gives warning of the presence of serious disease ; (6,) It is safer to attack cases of pelvic suppuration from above than from below ; (7,) Suppurating tubo-ovarian cysts are usually the result of ulceration on the tubal side of the adhesion between tube and ovary, but in exceptional cases result from ulceration on the ovarian side ; (8,) The immediate results are more satisfactory after complete than after partial operation ; (9,) One of the chief risks in the operation for the separation and removal of inflamed tubes is the liability to mistake thickened and adherent intestine for diseased tube. The way to avoid error is to trace the tube from its uterine end outwards ; (10,) The exceptional instances in which pain persists after operation for gross lesions of the uterine appendages are generally to be explained either by omental or intestinal adhesions, or by the co-existence with the actual disease of a neurotic condition, of which the pelvic pain is a mere local expression ; (11.) Tubal disease in the virgin is generally, if not always, tubercular ; (12,) Hydro-salpinx, in the great majority of cases, is merely a form of retention-cyst, due to occlusion of the distal end of the tube from without ; (13,) Simple collections of serum, both large and small, are apt to form beneath the peritoneum covering the tube and broad ligament in chronic cases of pelvic inflammation, especially in those of very long standing. Probably the best treatment of these cysts, after exposing them and making certain of the diagnosis by abdominal section, is simple puncture and evacuation, the risk of removal being, in the author's experience, out of proportion to their importance ; (14,) Hæmatosalpinx, though no doubt due, in the majority of cases, to tubal gestation with apoplexy

of the ovum, is sometimes an incident in the course of a chronic salpingitis. In these exceptional cases the walls of the distended tube, instead of being attenuated by the distension, as Bland Sutton has shown them to be in tubal gestation, are thickened by inflammatory deposits.

In the discussion which followed, in support of Dr. Cullingworth's conclusions, I gave details of sixty-five cases of pelvic peritonitis on which I had operated, with two deaths, *i.e.*, with a mortality of less than 3 per cent.

That tubercular peritonitis is really curable by abdominal section, the cases published by me[7] two years after operation absolutely prove, as do also the published cases of Richelot and Routier.[8]

After experiments on rabbits, Dr. Max Walthard comes to the conclusion that desiccation is the most important adjuvant factor in peritonitis, to avoid which he advocates that in all laparotomies, the parts exposed should be freely irrigated with sterilized warm normal saline solution. The conclusions he is able to draw from his experiments are as follows :—

(1,) In an aseptic and "protected" (that is, by warmth and moisture) operation, with or without infection, no adhesions form between an injured surface if that is opposed to a normal one. Thus the abdominal cicatrix is not adherent to omentum nor bowel, and the serous covering of the bladder or uterus may be freely destroyed by the cautery without any adhesion forming between it and the neighbouring structures covered with normal membrane.

(2,) If two injured surfaces are free to move in the cavity, that is, by peristalsis, etc., no adhesion forms. The reason of this is that each injured surface moves opposite an uninjured area. That this is actually the case he has shown by immobilising the bowel by (*a*) giving opium after the operation, (*b*) fixing the parts by a ligature, and finding that under these circumstances adhesions invariably prevented themselves. The empirical objections to opium after laparotomy thus find a basis in fact from the point of view of preventing adhesions.

Dr. John Phillips[9] draws attention to the dangers resulting from adhesions set up by local peritonitis after ovariotomy, and reports cases of intestinal obstruction following on ovariotomy some time after the original operation.

There are therefore three distinct varieties of causation of intestinal obstruction after ovariotomy : (1,) When the adhesion arises from the stump ; (2,) From the cicatrix of the abdominal wound ; (3,) From intestine to intestine. The small intestine, in consequence of its greater mobility, is liable to form adhesions with any abraded surface ;

hence we find them more common in connection with the small than with the large intestine. Martin of Berlin has proved, as the result of observations on second operations on the same patient, the presence of slight non-septic peritonitis as the immediate effect of every ovariotomy. The colicky pains which patients often suffer from after ovariotomy, and complicated with constipation, are due to small peritonitic adhesions the result of this localized non-febrile peritonitis. Hunter has devoted a paper to this subject, and it is well worthy of perusal. If the prevention of formation of adhesions could be arrived at for forty-eight hours after operation, our position would be a more favourable one. In an interesting paper by Dr. R. T. Morris on this subject, he declares that he has completely demonstrated the fact that an application of a film of aristol to the stump prevents secondary peritoneal adhesions.

REFERENCES.—[1] "Med. Chronicle," July, 1892; [2] "Med. Chir.," July, 1892; [3] "Brit. Med. Jour.," March 19, 1892; [4] "Western Medical Reporter," No. 10, vol. xiii; [5] "Lancet," Oct. 22, 1892; [6] Transactions of Obstet. Soc., 1892, and "Lancet," Nov. 5, 1892; [7] "Brit. Med. Jour.," March 19, 1892; [8] "Annales de Gynæcol.," May, 1892; [9] "Lancet," Sept. 10, 1892.

Synopsis.—(Vol. 1892, p. 362.) Antiseptic Laparotomy is not contra-indicated even by collapse except in tubercular forms.

Carvi employs Permanent Drainage in chronic idiopathic peritonitis.

PERITYPHLITIS.

Prof. E. Sonnenburg, M.D., Berlin.

In the following article I wish to place before the profession a few conclusions upon the diagnosis and treatment of acute perityphlitis, which are based upon a personal experience of over fifty operations undertaken in all stages of the acute form of this disease. I am sure that the indications for operative interference are very distinct and exact, and I trust to be able to lay them before my readers clearly and succinctly. By the term perityphlitis, I mean the perforating appendicitis which terminates in a local abscess, or a diffuse peritonitis.

Perityphlitis is usually employed to designate all inflammations of the connective tissue around the appendix, and no distinction is made between paratyphlitis and perityphlitis. The terms peri- and paratyphlitis generally refer to the same process. The name only signifies in which manner the inflammatory process spreads. The former term generally refers to exudations that are situated on the posterior surface of the cæcum. They are for the most part extra-peritoneal. Paratyphlitis is a suppuration of the retro-cæcal cellular tissue of the pelvis, and is caused in the largest number of cases by perforations of the vermiform appendix.

This form of perityphlitis is very common. It occurs more frequently than inflammation of any other portion of the intestinal tract. It is essential for the clear description of the disease to note the variations in the form and the position of the appendix. The usual position is either behind the ileum and its mesentery, or behind the cæcum with the tip pointing upward. The appendix may, however, be found adherent to the sigmoid flexure, or to the rectum, or other parts. It varies as much in size as in its contents. Thus its length is from twenty-six centimètres, and its contents are more usually hard lumps of fæces than a foreign body. The inflammation of the appendix may either be of the simple catarrhal, or of the ulcerative type. It is clinically impossible to diagnose catarrhal inflammation, but if this catarrhal inflammation passes on to ulceration, perforation, and local peritonitis, the diagnosis can be easily made, for the clinical symptoms are very clear and typical.

Clinical Symptoms of Perityphlitis (Perforating Appendicitis).—(1,) The patient who has previously enjoyed perfect health, is suddenly seized by intense and excruciating abdominal pain. This is so severe at times as to induce collapse. At first the pain is diffused over the whole abdomen, but often it is referred to the iliac region. Vomiting and diarrhœa (seldom constipation) complete the onset symptoms. The belly becomes distended, and there is soon some evidence of dulness in the iliac region, and induration is to be found here. There may be only a very moderate febrile action for one, two, or three days, and this may be associated with continued but moderate pain resembling an ordinary catarrhal attack with intestinal colic. But usually the fever rises very rapidly, and in a few days a circumscribed peritonitis is formed. An infiltration tumour, indurated and dull on percussion, is discoverable in the iliac region, and the pain is concentrated at this spot; (2,) In other cases when general peritonitis commences at once, a rapid development of the signs of peritonitis ensues. The temperature rises, the pulse becomes frequent, pain and tenderness, not localized to the iliac region but felt towards the middle of the abdomen, are experienced. Vomiting is incessant. These cases generally end fatally in a few days. Perforating appendicitis ending in suppuration and the production of a local abscess or diffuse peritonitis, is more frequently met with than appendicitis without suppuration; (3,) The latter condition also produces local peritonitis and inflammation in the neighbourhood of the processus vermiformis. But the inflammation in this case has a very chronic character and occasions multiple adhesions and thickenings. Perforations of the appendix can also occur in this class of cases, but then the characteristic symptoms are absent, for the

perforation takes place without any signs. I have had several opportunities during my operations of seeing the *perforated* appendix lodged in a mass of inflammatory thickening.

In my opinion the above-named characteristic symptoms are sufficient for a diagnosis of localized peritonitis caused by perforation of the vermiform appendix. This diagnosis is maintained, if we find in the history of the case that the patient who had been healthy up to the time of the present illness had suffered at times without particular cause from colicky pains in the right side of the abdomen, signs which we can safely diagnose as ulcerative processes of the vermiform appendix; more so when biliary and renal calculi have been excluded and the bowels have always acted in a normal manner. This disease can be differentiated from typhlitis stercoralis by the fæcal tumour present in the former, which is painless in the beginning of the disease, and does not cause any rise in temperature. Even if an exudation should take place, it is not accompanied by violent febrile attacks as we observe in perforation of the appendix vermiformis. Furthermore, the exudations in typhlitis are much larger, and inasmuch as they are sero-fibrinous, the tumour is of a very hard consistency. In most cases they are absorbed completely, and suppuration rarely takes place. Typhlitis stercoralis with exudations is much rarer than perityphlitis of the vermiform appendix.

The differential diagnosis of peritonitis caused by perforations of the vermiform process and internal incarcerations or intussusception of the intestine may be difficult in the beginning of the disease, as all symptoms, even the tumour, may be found in both. The continued vomiting in the early stages of the disease, which may result in ileus (febrile symptoms often entirely wanting), and the passage of blood in intussusception of the intestines may alone render a diagnosis possible.

In abscess of the abdominal parietes (psoas abscess or descending abscesses found in this region), the intestinal symptoms are wanting (vomiting, diarrhœa, meteorism). In acute psoitis the pain is located more particularly in the right lower extremity. This disease cannot be confounded with pelvic exudations on account of the etiology of the latter. At times it may be difficult to make a definite diagnosis in the early stages of the disease. This is especially true in women.

It is possible, however, to recognize and diagnose peritonitis following the perforation of an ulcerative appendix vermiformis, inasmuch as this disease presents definite and characteristic symptoms. My experience shows that surgical treatment is indicated in perityphlitis in all cases in which we find local peritonitis produced by perforation, as

the appearance of the latter indicates that suppurative degenerations have taken place in the exudations. Consequently if we find a painful exudation accompanied by the above-named violent symptoms and high fever, a surgical procedure is not only justifiable but strongly indicated.

The exudations may vary in extent and consistency, depending greatly on the amount of intestinal contents that passes through the perforation. The size of the adhesions depends mainly on the variety and amount of liquids which pass through the perforated appendix vermiformis, and upon the extent of adhesions surrounding the appendix. I have found in the living, twenty-four hours after the disease had set in, that the exudations consist of pus, sometimes of pus alone, but more often they are mixed with fæcal matter. This condition may vary, but the high temperature in perityphlitis always indicates a purulent process. I have always endeavoured to make my views, gained by operating on the living, run parallel with those of general practitioners, in order to explain their apparently good results obtained by the expectative treatment. I cannot say that I particularly value the statistics of the physician. A person, who like myself, has charge of a large surgical clinic, knows very well that in those statistics a great many cures are reported which are only *apparently* cured, as they recovered from their first attack only to enter the surgical wards with a relapse. In such statistics we always find cases which appear questionable, and no doubt belong to another category of diseases.

There can be no doubt that a large number of these perityphlitic abscesses perforate into the intestine—a much larger number, in fact, than is supposed. The pus is discharged with the fæces, and if it is present only in small quantities, it is overlooked entirely. The patients suddenly notice considerable relief; we find them in a much better condition, and a perfect cure may result, especially in cases in which there is a broad communication between the abscess and the intestinal tract. If, on the other hand, there is only a small or valve-like opening between the abscess and intestinal tract, stagnation and further degenerative processes with all the symptoms of sepsis take place, resulting in the patient's death.

Desiccation of the exudation occurs even more frequently than perforation into the gut. The liquid portion is absorbed, the solids remain, and consequently at an autopsy the remains of a fæcal calculus have occasionally been found in the midst of old adhesions. Only a short time ago I met with such a condition at an operation. In this case perityphlitis caused perforation and multiple abscesses of the

abdominal cavity. In the primary seat of affection I found a fæcal calculus surrounded by solid adhesions. The abscess had disappeared in the course of the disease which had lasted several weeks. The patient recovered completely. Again, these abscesses may exist for years in a more or less liquid state. Perforation of such abscesses into the abdominal cavity may take place after ten, fifteen or twenty years (personal observation), and cause a purulent peritonitis leading to the patient's death.

Although we know on the one hand that genuine and permanent cures may take place spontaneously, nevertheless, we must bear in mind, that by any slight mistake in diet, by restlessness, or pressing at stool, the disease may suddenly take on an acute character, and the clinical picture be entirely changed. Extensive and dangerous descensions are formed, or the adhesions of the abscess rupture, and the contents are emptied into the abdominal cavity. Both of these cases are dangerous purulent processes. This disease evinces a most variable character, and the prognosis is very uncertain as to its course. Although simple in the beginning, the disease may suddenly become very acute and complicated. Relapses, pyophlebitis, perforations and other complications may suddenly arise. Therefore we cannot look upon this disease as curable in a certain percentage of cases, but we must admit that in each case the prognosis is uncertain and the case may lead to dangerous disturbances and death by sudden complications. For this reason each case should be studied by itself, and our decision rendered according to the indications that may present themselves. I am of the opinion that in each case of perityphlitis in which a painful exudation has developed under the above-named characteristic initial symptoms, the exudation consists of purulent infiltration, the result of perforation of the appendix vermiformis. This opinion is based upon observations in operations on the living, and therefore all the more valuable. I may say that henceforth the question which treatment the surgeon should adopt may be answered without difficulty. We recognize special indications which imperatively demand operative procedure, and *hesitation* as to whether an operation should be resorted to, is a thing of the past. I am, moreover, most decidedly opposed to explorative aspiration as a means of confirming diagnosis, and fully coincide with Roux, who says: "*Elle est quelquefois dangereuse très souvent sans résultat toujours inutile.*" We are in a position to tell the patient: There is pus present caused by the inflammation. The pus may disappear or be discharged through the natural channel, and thus all the symptoms of the disease may disappear without operative procedure. But even under the most careful medical treatment the

disease may continue to grow worse and thus endanger life, or, even though there be an apparent cure, dangerous symptoms may again arise and the disease end fatally. By means of an operation the disease is removed *in toto* in a much shorter time, and a permanent cure is the result. There are no special dangers connected with this operation, especially when we operate early and before complications set in. The operation is the only means by which dangerous complications may be avoided, and it is also a safeguard against the much feared relapses of the disease. If in this manner the patient is informed of the chances of both the expectant and surgical treatment, I am sure many patients would choose the operative procedure early in the disease. If we do not hesitate to operate in other cases, such as empyema, abscess of the brain, etc., in which we suspect pus, why should we hesitate when we have purulent infiltrations of the gut? The fact that the general symptoms of pus formation, such as fluctuation, etc., may be wanting, ought not to keep us from operating when we suspect pus from other positive signs. In cases in which the diagnosis is difficult, those in which the abscess is deeply situated or in which the exudations are smaller, it is of advantage to operate in two stages (zweizeitig), especially when one has not a very large experience in the operative treatment of perityphlitis. Through an incision of the abdominal parietes we are able to recognize an exudation which slowly increases in size, and which may be opened after a few days. Even now I sometimes employ this latter method, but I practise it in a smaller number of cases than formerly.

The operation for perityphlitis is not a dangerous one, neither in itself nor for the patient, so long as we are dealing with uncomplicated cases in their first stages. But if we are dealing with older cases in which septic changes have taken place, surgical treatment will have little influence upon the course of the disease, although it may even then occasionally save the patient's life. In order to judge the value of this operation properly, we must separate the favourable and uncomplicated cases from those in which a septic process has taken place.

For a consideration of the question at issue, I have up to date (Oct., 1892) more than fifty cases at my disposal which have undergone surgical treatment. If I exclude from these cases those which have come to notice after sepsis had set in (including those with general septic peritonitis), I can state that *all* have been cured by means of operative procedure. The operation was a complete success in each of these cases. The abscess was found in each individual case, and the disease definitely cured after closure of the wound. With such results we may be quite content. In regard to the lapse of time

between the commencement of the disease and the time of operation, I may state that in one case I operated as early as forty-eight hours after the appearance of the acute symptoms of peritonitis following the perforation of the appendix vermiformis, in three cases on the third day, in six on the fourth day, in seven on the fifth, in one on the sixth, and in eight on the eighth; in the other cases at even a later date. A permanent cure of perityphlitis results only after the complete removal of the pathological process from the vermiform appendix. As long as necrotic parts are present or a cavity communicates with the intestines as a result of the perforation, a cure is impossible. The presence of fæcal calculi (they often appear multiple) may not prevent closure of the wound, but they are a *locus minoris resistentiæ*, and will sooner or later cause a new perforation and be dislodged, causing a recurrence of the whole inflammatory process. In other cases we are compelled to re-open the adhesions, palpate the whole cavity and extirpate the vermiform process as a supplementary operation. On account of these experiences gained by observation in a number of cases, I have resolved to make a large opening in all cases of perityphlitic abscesses, and by all means search for and find the vermiform process. This requires great dexterity and a large experience. In some cases, excepting those which have existed for a long time, we are able to isolate the vermiform appendix, and even in these exceptional cases we can perform the isolation after a careful division of the numerous adhesions. After the appendix has been laid bare in this manner, we have to determine the proper plan of treatment for each individual case. The most rational is undoubtedly the removal of the appendix as near its origin as possible, followed by a careful stitching up at the point of amputation. After this treatment we may expect a safe and rapid healing of the wound and abscess cavity. After a few weeks the patient may be fully restored to health, while it takes from five to seven weeks to effect a cure without an operation. But the more favourable cases are rare. Even if we operate at an early date (on the second day) we may find the vermiform appendix so enveloped and bound down by adhesions, that its removal may be impossible. Very often chronic inflammations with few or no symptoms, but which lead to adhesions surrounding the vermiform appendix, precede a perforation of the latter. In these cases we find upon opening the abscess the appendix inseparable from its adhesions. If it is impossible to extirpate the appendix, nothing remains to be done but to resect parts of it and await necrosis of the remaining portion, which will then become detached and removed spontaneously. In this latter case there need not necessarily be a communication with

the intestines. I often witnessed such spontaneous expulsions of vermiform processes and their fæcal calculi which had been lodged in surrounding adhesions without leaving a fistula behind. This is only possible if we make a large opening into the abscess.

The first requirement for a successful surgical treatment of perityphlitis is the finding of and extirpation of the vermiform appendix, but the detection of diverticula of the abscess cavity, if any are present, is equally important. For this reason it is necessary to make a large primary incision of such a direction that we may be able to overlook as large an area as possible. I have of late made the incision (a curved incision with its convexity toward the lower extremity, the same as is also selected by other surgeons for ligation of the common iliac artery) *as near* to the crest of the ilium as possible, beginning a little above the anterior superior spinous process of the ilium in close proximity to the bone, continuing down to the anterior inferior spinous process, then along Poupart's ligament and ending about the middle of the latter. This incision has the great advantage of not favouring the formation of a ventral hernia, a complication that is often observed when the incision is placed nearer the middle of the abdomen. Another great advantage is that by this incision the abscess is much more accessible, especially when it is located on the posterior surface of the cæcum and colon (paratyphlitic abscesses), as it can be reached without injury to the peritoneum by lifting the latter from the iliac fascia. By means of the above incision we are able to get to the abscess in *whatever position* it may be situated. Still another advantage of this curved incision is that we are enabled to reach and open descensions of pus that may exist. The course of these descensions in perityphlitis is a typical one: at first downward on the external border of the psoas muscle as far as Poupart's ligament, then over the crest of the ilium as high up as the posterior border of the liver and right kidney. If the descension is very extensive, it is well to make a contra-incision along the external border of the quadratus lumborum muscle. The after treatment is very simple, and consists of tamponing the cavity with strips of iodoform gauze until the wound has been healed.

This, in short, is my view of the *surgical* treatment of perityphlitis. If the well recognized clinical symptoms of peritonitis following perforations are present, there is an indication for operative procedure. The operation is simple and not especially dangerous, and the results are generally good ones. Even if a large number of patients suffering from perityphlitis may be cured spontaneously, the prognosis is very uncertain in a disease with so variable a character. Only by means of operative procedure are we able to change the prognosis to a most favourable one.

PERTUSSIS. *Henry Dwight Chapin, M.D., New York.*

Dr. Ullmann[1] states that the cases which improved under treatment by **Bromoform** or **Sulphurous Acid** showed themselves equally amenable to other and indifferent remedies, and the cases of a worse type were not checked by either drug. The length of the illness was as little shortened, and recurrences as little hindered, as ever. Complications of every sort occurred, and the course of the disease was not influenced. The mortality was not increased. The sulphurous acid, through its irritating effects, many times did harm. Bromoform, perhaps, as a narcotic, somewhat unfavourably influenced the general condition of the younger children. By the lack of care in observing and recording cases, and the omission of control, experiments in the use of other and indifferent remedies at the same time, and finally by the neglect of one factor—the severity of the case and of the epidemic —is explained how ineffective methods are recommended as useful, and at the same time the general agreement in the results.

Dr. W. A. Smith[2] treated ten cases with **Antipyrin** with negative results, although the treatment was commenced in the early stage of the disease, according to Sonnenberger's method. Neither the severity nor course of the disease was influenced.

Dr. Gillet[3] gives the following review of the treatment of whooping-cough in 1892. After many trials of all the antiseptic substances *no specific has been discovered*, and most physicians have now concluded that the antiseptics are only of use against complications, and not to cure the malady. Liebermeister gave the tannate of quinine as a sure cure, but it is by no means certain. With **Antisepsis** and **Isolation**, M. De Gassicourt gets eight cures out of ten cases, and in former days he had eight deaths in the same number. Cases of this trouble must be isolated and should never stay in the same wards as the other patients. This is the key of the prophylaxis of the disease. Professor Baginsky (of Berlin) has separate rooms for all cases of *all* infectious diseases in children. If our efforts against the bacillus itself have been without result, what can be said of those directed against the poisons that it eliminates? It is hoped something is being done for this second indication. For the moment we can at least *favour the expulsion of the pathogenic element*, which indeed is what we did before we knew bacteriology, by giving something to expel the mucus formed. Ipecacuanha must not be overdone, however, and scillitic oxymel has been praised. As we are not sure of doing anything against the pathogenic element but this, we can at least act against the *inflammation of the mucous membranes* and try to *calm the cough*. The therapeutics of the catarrhal phase of the malady consists of the

use of expectorants, such as **Ipecacuanha** in infusion, **Benzoate of Soda**, or else the **Carbonate of Potassa**, as follows :—

℞ Carbonate of Potassa	3 parts	Water	100 parts
White Sugar	10 ,,	Cochineal (to colour)	1 ,,

M. Sig.—Teaspoonful every hour or two hours.

Or else use :—

℞ Yellow Sulph. of Antim.	gr. ½	Distilled Water	ʒxijss
Mucilage (Acacia)	ʒv	Syr. (Simple)	ʒv

M. Sig.—Teaspoonful every hour.

Spray may be used simply to thin the secretion.

The capital symptom is the cough, and we must act on the spasm by antispasmodics or anæsthetics, and the choice is immense, but habit has only retained a few drugs. In Germany and Austria they mostly resort to morphine, using its hydrochlorate in enema (of course with great precaution); but while the use of opium is not entirely given up in France, here there is a marked preference for **Belladonna** and **Bromides**, adding **Chloral** in severe cases. These can be given together, as Dr. Thomas, of Geneva, recommends :—

℞ Pot. Brom.	2 to 3 parts	Aqua	120 parts
Syr. Belladonnæ	30 ,,		

M. Sig.—Teaspoonful three or four times a day.

A few drops of essence of thyme may be added to this prescription. Tincture of drosera is used by M. Sevestre with good results. As to antipyrin, the opinion is much divided. Dr. D'Espine will have none of it, thinking it weakens the constitution and is apt to produce pulmonary complications. The late Prof. Sergi and M. Boicesco (of Bucharest) use this :—

℞ Resorcin		Syr. of Pine Tree	30 parts
Antipyrin	āā 1 part	Solution of Gum	100 ,,

M. Sig.—3 to 4 tablespoonfuls per day, and increase gradually.

It is true that we have a good drug for the nervous element in antipyrin, but we must not forget that it closes the kidneys, and if there is fever it will be wise not to use it. Brushing the throat with solutions of cocaine, 1 in 20 to 1 in 30, has its partisans. Prof. Hirschsprung is in favour of musk in infants for the cough.

The newer drugs, such as **Bromoform**, 1 to 5 drops, in alcohol three times a day; **Naphthaline**, 15 to 20 grammes, slowly volatilized in a crockery dish, the **Essence of Cypress Leaves**, which is soaked in the child's clothes, and benzine, with other remedies, are proposed with more or less in their favour.

Dr. Johnson[4] recommends **Thymus Vulgaris** as the best remedy in the treatment of whooping cough. The author uses the drug in the form of an infusion, 30 to 50 grammes being placed in 700 grammes of

water. The dose is a teaspoonful to a dessertspoonful eight to twelve times daily. No harmful effects follow, with the exception of a mild diarrhœa. The thyme should always be fresh, and it is probably the thymol which is the active agent in producing the desired effect.

Dr. J. Cassel[5] has treated forty cases with **Bromoform**. There is not much to claim for it as shortening the duration of the disease; but it lessens the number of paroxysms a day. Only small doses—4 or 5 drops—three times a day, should be given. It will, however, not take the place of other drugs. Large doses are poisonous.

Dr. Moncorvo[6] gives a further report upon the local treatment of the peri-laryngeal mucous membrane by **Resorcin**. He prepares a chemically pure solution of resorcin in sterilized water, of a strength of 10 per cent. The applicator consists of a thick brush of very fine hairs affixed to a long handle of flexible iron wire. The applications are made every two or three hours. When there is excessive excitability of the laryngeal mucous membrane, the first few brushings are preceded by an application of a 5 to 10 per cent. cocaine solution.

REFERENCES.—[1]Ullmann, "Arch. f. Kinderh.," 1891, xiv., 19; [2]Smith, "Med. News," 1892, lx., 48; [3]Gillet, Correspondence "Archiv. Pediatrics," July, 1892; [4]Johnson, "Jour. de Méd.," Oct. 6, 1891; [5]Cassel, "Deutsch. med. Wochen.," Feb. 4, 1892; [6]Moncorvo, "Ann. de la Policlin. de Paris," June, 1892.

Synopsis.—(Vol. 1892, p. 363.) **Antipyrin** must be used with great caution. **Acetanilide**, ½ to 5 grs. daily according to age. Heimann gives **Phenacetin**, 1½ gr. every three hours for a child three years old. Rothe uses R Ac. Carbolic., gr. 15; Sp. Vin. Rect., gr. 15; Tinc. Iodi, gtt. 10; Tinc. Belladonna, gtt. 30; Aq. Menth. Pip. ℥ij; Syr. Opiat., gr. 150, M A teaspoonful every two hours for children over two years old. **Terpine**, 10 to 15 grs. daily for adults. **Common Thyme**, 1½ to 6 ozs. daily, combined with syrup of **Marshmallow**, and taken regularly for two weeks at least.

Ungar advises free use of **Quinine**, 16 to 22 grs. per day, and ¾ gr. dose to child under three months old, diminishing the dose as improvement begins. Reynolds dissolves the **Quinine** in **Hydrobromic Acid**, and adds **Potassium Bromide**, using 3 grain doses for a child three years old.

Robertson gives **Pure Benzole**, 2 ♏ on sugar, in mucilage, or in capsule for a child six months old. Cachazo advises **Vaccination**.

PHARYNGITIS.

Synopsis.—(Vol. 1892, pp. 50, 493.) Felsenburg uses **Hydrastis** locally in chronic pharyngitis. **Salol**, 60 to 90 grs. daily, has been employed in acute pharyngitis.

PHARYNX (Disorders of).

P. Watson Williams, M.D., Lond.

Hitherto the treatment of chronic pharyngitis has been eminently unsatisfactory, and many lives are blighted by intractable and aggravated forms of chronic pharyngitis that the usual methods of treatment fail to relieve. No doubt this is largely owing to the fact

that the disease is too generally regarded as local, requiring mainly local treatment, or else as purely nervous. Some valuable contributions on the pathology of chronic pharyngitis merit our careful consideration, as forming a more rational basis for treatment.

Mr. Lennox Browne denies that chronic pharyngitis is ever purely nervous, and asserted that in those cases in which the objective were not proportionate to the subjective symptoms, the case must not be interpreted as purely neurotic, but as an outcry of fatigued pharyngeal muscles, the result of a faulty production in either the respiratory or vocal regions.

The two main causes are—

First.—Nasal stenosis; and the circumstance, that in young children who are the subjects of naso-pharyngeal adenoid growths, causing mouth breathing, there is a frequently associated granular pharyngitis of a very marked grade (as well as engorgement of the turbinals, both of which promptly subsided on removal of the obstruction to free nasal respiration) was used as an argument, that nasal stenosis was a fruitful factor, given an exciting cause, of recurrent attacks of acute pharyngitis, the precursor of chronic inflammatory changes.

Secondly.—The main cause of chronic pharyngitis in voice users was considered to be faulty respiration, and the author earnestly contended for the importance of diaphragmatic contraction as preceding and continuous with the action of the intercostals, as the best method, both for the purpose of full inflation of the lungs, and for their steady and gradual depletion, so necessary for the proper adjustment of the vocal cords. Imperfect inflation of the lungs, as well as exaggerated inspiration by elevation of the clavicle, were responsible for fault of tone-production in the larynx, which had to be corrected in the pharynx, and these produced pharyngeal congestion.

Incidentally, Mr. Lennox Browne contends that the term "clergyman's sore throat," so often applied to "chronic pharyngitis," is ridiculous. Clergymen are not afflicted by Providence with a special disease analogous to drunkard's liver or tobacco amaurosis, but those who suffer from pharyngitis simply pay the penalty of wrong method, or over use, and are in this respect on an equal footing with the itinerant costermonger similarly affected.

The practical deduction of the author's paper is, that rest alone will not cure chronic pharyngitis due to defective methods. On the other hand, that correction of such faults will often render surgical treatment unnecessary, and is an important auxiliary when this is indicated.

The importance of faulty voice production as a cause of chronic

pharyngitis was further demonstrated by Dr. Sandford, of Dublin, and Dr. Middleham Hunt.

Dr. Watson Williams, in a paper on the dyspeptic sore throat read at the Annual Meeting of the British Medical Association, discussed the symptoms and causes of this form of chronic pharyngitis. In typical cases the local appearances are fairly distinctive, for, instead of the dusky diffuse congestion due to portal congestion, the diffuse congestion of chronic pharyngitis, arising from acute or subacute catarrhal attacks, we find an intensely vivid, well demarcated patchy condition, principally of the soft palate, the anterior and posterior pillars of the fauces and of the epiglottis. The pain is sometimes intense, and bears no proportion to the often slight departure from the normal appearance of the parts involved. The frequent recurrence of this affection results in a chronic congestion indistinguishable in appearance from other forms of chronic pharyngitis.

The following is a formula much used in France[2]:—

℞	Acid. Carbol. cryst.		Glycerini	
	Camphor	āā gr. xv	Aquæ destill.	āā f℥ij

This is painted on the inflamed part three times a day. It will be found to have a mechanical action as well as an antiseptic one.

The "American Journal of Pharmacy" gives the following formula for Goddard's astringent gargle :—

℞	Fol. Rosæ rub.	2 dr.	Acidi Sulphurici dil.	½ dr.
	Aquæ bullientis	5 oz.		

Infuse, when cold strain, and add—

℞	Mel. depurati	1 oz.	Spir. Vini rectificati	
	Acidi Tannici	2 scr.	Aquæ Rosæ	āā 6 oz
	Aluminis	2 dr.	M.	

Another gargle is as follows :—

℞	Red Rose Petals	2 dr.	Boiling Water	6 oz.
	Pomegranate Rind	4 dr.		

Infuse, strain, and add—

℞	Alum	2 dr.	Clarified Honey	1 oz.
		Mix, filter.		

Erysipelas of the Pharynx and Larynx.—An excellent account of this often unrecognized affection is given by Dr. de Havilland Hall, in which its distinguishing features and treatment are reviewed. "It is hardly necessary to say that the prognosis is always grave, not only on account of the local troubles which may with the most unexpected rapidity cause death, but also on account of the general conditions brought about by the disease. The most common cause of death is failure of the heart ; to this I attribute the fatal result in my second

and third cases. Œdema of the larynx may come on so rapidly that death may occur before there is time for the performance of tracheotomy; extension of this disease to the lungs may set up a low form of pneumonia or pulmonary œdema; or, lastly, the patient may die from general infection or cerebral complications."

The treatment which he has employed in cases of erysipelas of pharynx and larynx is the following: The patient should be kept in bed in a room with a temperature of about 66° F. An ice collar should be applied to the neck, and he should have pellets of ice to suck. If seen early, and the disease is confined to the pharynx, 20 minims of **Tinct. Ferri Perchlor.**, with the same amount of **Glycerine**, may be given every three or four hours; if, however, the larynx is implicated, and there is any tendency to spasmodic attacks of dyspnœa, 10 to 28 grains of **Bromide of Potassium** should be administered instead of the iron mixture to diminish the tendency to spasm of the glottis. If, in spite of this treatment, the symptoms of laryngeal stenosis increase, the pharynx and larynx may be painted with a 20 per cent. solution of the **Hydrochlorate of Cocaine.** The first effect of the cocaine is usually to cause a profuse secretion of mucus and saliva, and then there is a notable diminution in the bulk of the swollen parts. If after waiting for half an hour or an hour there is no marked improvement in the symptoms, the parts should be freely scarified, and for this purpose Mackenzie's guarded laryngeal lancet is the best.

Energetic counter-irritation by means of sinapisms to the throat, chest, back, and shoulder-blades has been suggested as a means of determining the erysipelas to the surface. Dr. Bedford Brown[3] gives the history of two remarkable cases, in which the free application of **Sinapisms** was followed by immediate relief to the symptoms of laryngeal stenosis. Dr. Helbing, of Nuremberg, advocates a similar plan of treatment in phlegmonous pharyngitis. He applies 3 or 4 drops of **Croton Oil** over the skin, between the angle of the jaw and the larynx. He has found speedy benefit from this procedure. The production of eczema is the only drawback.

Ryland had a very high opinion of the good effect of **Blisters.** "They appear, in fact, to be the external remedies on which our chief reliance should be placed, as they evince a singular power of preventing the extension of erysipelas in other parts of the body."

The application of a strong solution of **Nitrate of Silver** (80 grains to the ounce) to the inflamed mucous surface before the onset of œdema is recommended by Gibbs and Durham. A saturated ethereal solution of **Iodoform** has also been found useful.

The question of tracheotomy will, of course, have to be considered in these cases. Cohen's researches into literature have not disclosed a single record of life rescued by its agency, but he would still recommend tracheotomy, if not for the one chance more it offers to life, at least for the relief it affords the patient.

Dr. Bedford Browne has for some time past used **Salicylate of Sodium** in erysipelatous affections attended with great rise of temperature, with delirium and a tendency to cerebral complications, and, more recently, with still better effects, the **Salicylate of Ammonium.** He gives it in doses of 20 grains every three hours, and he regards its action as being eminently antiseptic.

REFERENCES.—[1] "Medical Press," Sept. 7, 1892; [2] "Archives of Pediatrics," Dec., 1891; [3] "Journal of American Medical Association," July 2, 1887.

PHTHISIS. (See also "Lungs, Diseases of.")

Synopsis.—(Vol. 1892, p. 367.) To disinfect tuberculous sputa, **Carbolic Acid**, 4%, with Hydrochloric Acid, 2% added; **Sulpho-Carbolic Acid**, 2 to 5%, or **Creolin**, 10%, are best. **Guaiacol** in capsule or tincture dose, 20m or more daily, is well borne.

Picot uses a solution containing **Iodoform**, 1 centigramme, **Guaiacol**, 5 centigrammes to the cubic centimètre of **Olive Oil** and **Vaseline**, injecting 1 cubic centimètre into the supra spinous fossæ, increasing the dose to 3. Sée advises two or three hours daily to be passed in a cabinet of compressed air containing the **Vapours of Creasote** mixed with **Eucalyptus**. Gavoy found **Iodoform**, 1% in **Sweet Almond Oil**, a useful hypodermic injection, and Roussel uses **Eucalyptol**, 20% in pure sterilized **Olive Oil**. Lannelongue injects **Chloride of Zinc**, 2 or 3 drops of 10% solution in several spots round a tuberculous joint; he has used 20% for the epididymis, and 40% for the lungs. Thorowgood commends **Soda Hypophosphite**, 5 grs. thrice daily.

Brown-Sequard's Extract is apparently useless. Andrew advises **Aconite** to lower blood pressure in hæmoptysis. Nothnagel uses **Morphine** in hæmoptysis to allay cough, also **Ergotin** and **Lead Acetate** as hæmostatics, keeping the patient absolutely quiet in a moderate temperature, and taking only **Cold Milk** for two days. Cesari advocates **Antipyrin** as a local hæmostatic; for night sweats, Coombemale uses **Tellurate of Soda**, 5 centigramme doses, but **Camphoric Acid**, 15 gr. doses at 2 a.m. is preferable. Erede uses **Sulphonal**, ½ to 1 gramme, given in the early evening. Ruck emphasises the necessity of careful dieting and treating gastric catarrh. Lépine injects **Goats' Blood** or **Serum** subcutaneously, and Semmola uses **Dogs' Blood** in the same way. **Cantharidin** and **Cantharidinate of Potash** have been employed hypodermically. Henage Gibbs and Shurly report some success with inhalations of **Chlorine Gas**, and the hypodermic use of **Iodine** and **Chloride of Gold and Sodium**. As intra-pulmonary injections, **Beechwood Creasote** in **Almond Oil** has been used. Tillmanns injects 10% sterilized mixtures of **Iodoform**, **Glycerine** or **Iodoform Oil**, 5 grammes at a time. Blake White has substituted the subcutaneous injection of **Chloride of Gold and Sodium** and **Iodide of Manganese**, guarded with a small amount of

Morphia or Codeia and Atropia, for the intra-pulmonary injection, he considers Cyanide or Iodide of Gold specially indicated in laryngeal complications. Aulde recommends Arsenic internally (p 18). Smith injected 10 to 20 minims of Camphor Carbolate into the apices, at first every two or three days, and then daily with benefit (p. 28) Cruse gives Tincture of Hydrastis, 30 drops at bedtime, to check night sweats (p 50) The formulæ of oily solutions for injection are as follows:—*Pinet's Solution*: R Guaiacol, 75 grs.; Iodoform, 15 grs.; Olive Oil, Liq. Vaselin, āā part æq. ad. ʒiijss. *Pignol's Solution*: R Eucalyptol, 216 grs.; Guaiacol 75 grs; Iodoform, 15 grs.; Olive (or Almond) Oil, to ʒiijss. *Merel-Lavalée's Solution*: R Eucalyptol, 185 grs; Guaiacol, 75 grs.; Iodoform 60 grs; Olive Oil to ʒiijss. The hypodermic dose is from 50 to 210 minims in twenty-four hours (p. 60).

PITYRIASIS RUBRA (Hebra). *T. Colcott Fox, M.B.*

Dermatitis Exfoliativa (Wilson-Brocq).—In an elaborate paper by Jadassohn, attention is called to the frequent occurrence of tuberculosis in long-standing cases of this affection.

Gay failed to get good results by the heroic doses of **Potassium Iodide** recommended by Trantwelter.

Jordansky analyzed the scales, and found, in variance with the suggestion of Quinquaud and Vidal, that the daily loss of nitrogen by exfoliation is relatively trifling, and will not account for the characteristic cachexia.

References.—Jadassohn, "Archiv. f. Derm. u. Syph.," 1892; Petersen and Jordansky, quoted "Brit. Jour. Derm." April, 1892.

PLEURISY AND EMPYEMA.

R. Shingleton Smith, M.D., B.Sc., F.R.C.P.

Dr. Edwin Rickards[1] sums up the various questions relating to the treatment of pleurisy. He points out that in most cases the disorder is a secondary one—secondary to disease of some neighbouring organ or adjoining part, or to some dyscrasic condition of the blood.

After describing the phenomena of dry pleurisy, and of effusive pleurisy, he asks the question, Can we, by treatment, prevent effusion in a pleurisy which, without treatment, would be effusive? He has never been able to satisfy himself that any method of treatment has prevented effusion, and he believes that we have no efficient means of promoting the natural absorption of the effusion. Diuretics are, in his opinion, absolutely useless, and, worse than that, are harmful; they do not produce diuresis, but they lower the vitality of the individual.

As regards aspiration he has no doubt that, when the febrile stage is over, the sooner the fluid is removed the less likely it is to re-accumulate. By operating during the fall of the fever more than a second aspiration is rarely requisite; one frequently suffices.

After the operation by the usual method, when the pus begins to flow,

and before air begins to enter the chest, he places over the opening a piece of oil-skin eight inches square; this acts as a valve, and allows the pus to escape from under it, and admits no air. When the flow of pus has ceased, even on coughing, a layer of cotton-wool is placed over the oil-silk and fixed with an elastic bandage. This method does not prevent the use of a drainage tube, protected by a safety pin.

In dressing the case the following day, a fresh piece of oil-silk may be slid under the old one. If, on the patient's coughing, there should be no discharge from the opening or from the drainage tube (if one be used) the patient should be urged to stop breathing, the oil-silk and drainage tube should be quickly removed, the incision should be rapidly reopened with dressing forceps, and the oil-skin instantaneously reapplied.

Recoveries under this plan have been rapid. He thinks that if air can be excluded for twelve hours after the operation, and only a limited amount enters during the dressing, and none between the dressings, there is every inducement to the lung to expand; whereas, if air goes freely in and out of the chest by the incision, as in the ordinary method, there is no encouragement for the lung to do so.

In the discussion held before the Medical and Surgical Society of Paris,[2] upon thoracocentesis, the medical men generally agreed that in cases of pleurisy, pleurotomy should be performed early. The surgeons are much divided upon this point. Verneuil and Le Fort stated that repeated punctures are potent factors in occasioning suppuration of the exudate, no matter how carefully antiseptic precautions have been observed. Dujardin-Beaumetz and Dieulafoy, on the contrary, vigorously advocated early puncture. The latter physician stated that he has performed the operation upwards of four hundred times without meeting with suppuration in a single instance. It was generally agreed, however, that purulent effusion at the present day is much more frequent than was formerly the case. While some attributed this to the modern tendency toward early surgical intervention, others, particularly Dieulafoy, ascribed it to what they term the microbian constitution, these surgeons holding that for some years microbes have been more numerous and more virulent, particularly since the appearance of the grippe.

As to the time when it is necessary to make punctures, Hardy states that when the effusion is considerable, when the patient is threatened with suffocation, and consequently with sudden death, operation is indicated. Verneuil, on the contrary, under such circumstances, would relieve symptoms by an injection of morphine. Dieulafoy calls attention to the fact that dyspnœa is by no means the only cause of

death in cases of pleural effusion. Sometimes these patients die without presenting a single sign of dyspnœa. He would intervene when there is an effusion of three or four pints.

Another question discussed was as to the necessity for freely washing out the pleural cavity. Upon this point, too, there was a difference of opinion. The best method of irrigation is that advocated by Paul. He places in the pleural opening a double tube, around which there is a tight dressing, so that the air cannot possibly enter the pleural cavity between the tube and the lips of the wound. He then plunges the extremities of the drainage tubes into two vessels filled with antiseptic solution, so that when one vessel is raised, the pleural cavity is washed out by siphonage. His results were excellent.

Quenu's method of thoracoplasty was discussed by Verneuil. This method consists in making a vertical incision just behind the nipple, and excising about an inch of the second, third, fourth, fifth, sixth, seventh, and eighth ribs. Opposite the border of the scapula another vertical incision is made, and an inch is resected from each of the same ribs at this point. Finally, the rib nearest the fistula is resected, so that the suppurating cavity can be thoroughly cleaned out. As a result, there is obtained a movable thoracic flap, which can retract and become closely applied to the surface of the lung. In practice it was found that complete cicatrization was obtained in about six weeks.

Verneuil speaks favourably of this operation. Pean, however, holds that the mobility of the chest has little to do with the final healing of the fistula. The main point in treatment is, that the suppurating cavity should be freely opened, so that it can be readily treated and cleaned.

In this relation a note was received from West, the conclusions of which were that purulent pleurisies are much more frequent in infants under twelve years of age than in adults. If, in a recent pleurisy, reabsorption has not begun in eight days, puncture should be made. In the great majority of cases of purulent pleurisy in children, a single puncture is sufficient, if the precaution is taken to prevent the entrance of air.

West states that he has never regretted having made puncture too early. On the contrary, he has frequently been sorry that he did not make it sufficiently early.

In the discussion held on the paper read by Dieulafoy before the Academy, Alph. Guérin said that if acute pleurisy were treated by bloodletting, blisters, etc., according to the method of Laennec and his followers, there would be scarcely any occasion for the practice of

thoracocentesis ; and that, finally, the frequent occurrence of empyema was not due to the piercing of the pleura, but to the lack of employing at the beginning of the pleurisy an active and rational therapeutic course.

Peter said that an effusion may be interfered with or prevented ; that a moderate exudation (from 500 to 1000 grammes, for example) is a condition that calls for revulsion, and that thus the piercing of the thorax might be avoided, especially if the disease has not yet reached the twentieth day ; that if the exudation is considerable (say from 1800 to 2000 grammes), thoracocentesis should be practised after the twentieth day, and better by aspiration. The speaker, therefore, agreed in all points with Dieulafoy. Germain Sée condemned blistering.

Rickman J. Godlee[4] has given a full account of the treatment of empyema, in his introduction to the discussion on the subject at the Annual Meeting of the British Medical Association. He goes fully into the question why the treatment of empyema is so much more successful than it was twenty years ago, and he concludes that "we are more successful now because we make our openings very free, and our success depends in great measure upon the attainment of perfect drainage in all positions of the body, but not a little on the prevention of septic changes in the fluid secreted by the freely opened pleura."

He considers that no position is better than—none, indeed, is so good as—that opposite the ninth rib, just outside the angle of the scapula. He gives the following arguments in favour of removing a piece of rib as a routine practice : (1,) It allows of the best possible exploration of the pleura with fingers and probes ; (2,) It permits of the evacuation of masses of lymph ; (3,) It obviates to a great extent the difficulty, which is common afterwards, of retaining or reintroducing the tube.

He emphasizes two dangers in dealing with any pulmonary abscess, but especially a bronchiectatic one, both depending upon the facts—first, that it is impossible to diagnose with certainty the presence or absence of pleural adhesions ; and secondly, that in cases of bronchiectasis it is not uncommon to find a normal pleura over that part of the lung in which the physical signs of cavity are well marked. The dangers, then, are these : (1,) Simple puncture of a lung containing a septic abscess may, and often has, given rise to septic inflammation of the pleura, even though no pus has been extracted through it. (2,) A healthy pleura may be met with after the exploring needle has struck pus, under which circumstances the lung will probably fall away, and all the indications of the position of the abscess would be lost.

Continuous drainage for a period of four months gave a good recovery in a case recorded by Baskett.[5]

Since the operation of *resection of a portion of a rib*, with free drainage of the pleural cavity, is one now generally performed in empyema, after other treatment has failed, definite and statistical information regarding the condition of these cases after a considerable period has elapsed, is of very great importance. Drs. Hastings and Edwards[6] have been able to examine twenty-four cases formerly treated at the East London Hospital, for children.

The following statistics show the periods which have elapsed since the operations were performed: Seven years in two cases, four to five in four cases, three to four in two cases, two to three in seven cases, one to two in six cases, and less than one year in three cases. The ages of the patients at the time of operation were as follows: One year in two cases, two years in six cases, three in two cases, four in three cases, five in three cases, six in three cases, seven in one case, eight in one case, nine in two cases, thirteen in one case.

After careful physical examination, they found that the results were better than the account given by the mothers would have led them to expect; the completeness of the recovery in the great majority of cases was indeed surprising. The general nutrition was good in nineteen cases, and fair in five. Not one of them looked wasted or ill.

The result as regards the position of the heart points to good recovery of the lung in nearly all the cases. The completeness of the recovery is very surprising when we consider how severely ill a child generally is before operation, how profuse is the discharge of pus after operation, and to what an extent the physical signs are altered even when the wound has healed.

The accidents and sequelæ of thoracocentesis have been well described by Potain.[7] The accidents may be due to: (1,) The pulmonary congestion following removal of the fluid; (2,) Syncope; (3,) Embolism; (4,) Cardiac weakness.

He mentions **Sodium Chloride** as a treatment worthy of trial to prevent re-accumulation of the fluid. The patient should be placed on a dry diet, and the sodium chloride administered every two hours in teaspoonful doses.

Dr. J. A. Lindsay,[8] in discussing the treatment of pleural effusion and empyema, states his belief that the association of tubercle and pleural effusion is commoner than we have been in the habit of believing.

A great number of medical men[9] of the present day consider that the immense majority of pleurisies are of a tuberculous nature, and

consequently the treatment should be antitubercular. However, this opinion is far from being received in Paris. M. Germain Sée is one of those who believes in the microbian origin of pleurisy. He considers blisters as useless, and has no confidence in the different agents for internal medication, neither in diuretics, as milk and digitalis, nor in purgatives or sudorifics. Recently antipyrin was proposed, but it did not give satisfactory results. According to Sée the patient should be well alimented, in order to have strength to struggle against the invasion of the microbe. Thoracocentesis should not be made before the twentieth or thirtieth day, otherwise the effusion will be sure to return.

Professor Hayem, on the other hand, considers **Salicylate of Sodium** as capable, given internally, of reducing considerably the amount of the liquid. He discards blisters.

M. Lecorché follows the old classical method, as does also Professor Strauss.

M. Talamon has confidence only in thoracocentesis. However, he does not have recourse to it in every case, as many pleurisies get well by simple rest in bed. In any case he does not practise it before the third week. He orders no blisters nor any diuretics, as he believes them hurtful.

Professor Dieulafoy says that in acute pleurisy there are two indications—treatment of the pain and of the effusion. For the pain a small **Blister** might be applied, or an injection of **Morphine** given. When the liquid has exceeded a quart, tapping must be done, but all the liquid should not be drawn off at once, in order to avoid the accident so often witnessed in thoracocentesis. The operations can be repeated a few days afterwards, if necessary. The needle should be inserted in the eighth intercostal space, below the angle of the scapula. He never employs blisters, diuretics, or purgatives.

M. Huchard submits his patient to a milk diet, and orders a mixture containing squills and digitalis, with an occasional blister. He considers that pleuritic patients in general are candidates for tuberculosis, and, consequently, should be looked after.

M. Dujardin-Beaumetz is a warm partisan of revulsives. He employs large blisters, and renews them from time to time.

M. Moutard-Martin gives his preference to painting with **Tincture of Iodine** and the administration of **Quinine.**

M. Faisans said that, when called at the *début* of acute pleurisy, he employs **Wet-Cupping,** in order to relieve the pain and the oppression. As long as the effusion remains within bounds, he orders no other treatment; no blister as long as there is fever, no purgatives, no

pilocarpine, and in general, no diuretics, unless the patient insists on his "doing something." According to M. Faisans, there exists no medical treatment, properly speaking, for pleurisy. Thoracocentesis is the treatment *par excellence* when the liquid shows no tendency to diminish.

Treatment with **Salicylates** has been advocated by Köster.[10] Salicylic acid was given in 15 grain doses, and salicylate of soda in doses of 22 grains, three or four times a day. The result was decidedly favourable in seventeen out of a total of thirty-two.

Soon after beginning the use of the salicylic acid there began to be a resorption of the exudations, which advanced rapidly, and was usually complete in a short time. After two to four days there was a marked lessening of the exudate, and in most cases it had entirely disappeared in from five to seven days, even when the exudations were very considerable.

Dr. Sigmund Déri[11] also advocates the use of salicylates. He says "that chronic serous effusions into the pleura are often absorbed thereby. The drug has a powerfully diaphoretic, and probably also a specific effect."

REFERENCES.—[1] Rickards, "Brit. Med. Jour.," May 21, 1892; [2] "Revue de Thérap. de Clin.," 59 année, No. 8, and "Therap. Gaz.," July 15, 1892; [3] Dieulafoy, "Bull. de l'Académie de Méd.," Apl. 26, 1892, and "Therap. Gaz.," Aug. 15, 1892; [4] Godlee, "Brit. Med. Jour.," Oct. 15, 1892; [5] Baskett, "Lancet," June 11, 1892; [6] Edwards, Ibid., Aug. 20, 1892; [7] Potain, "La Méd. Mod.," No. 11, 1891; [8] Lindsay, "Lancet," Jan. 2, 1892; [9] "Therap. Gaz.," Apl. 15, 1892; [10] Köster, "Therap. Mon.," Mar., 1892, and "Brit. Med. Jour.," May 7, 1892; [11] Déri, "Therap. Gaz." Dec. 15, 1891.

Synopsis.—(Vol 1892, p. 400.) Clément employs **Antipyrin** in pleuritic effusion whether fever be present or not, giving 15 grs. every four hours, and after absorption of the fluid reducing the dose to 60 grs. daily. Tetz employs **Salicylate of Sodium** in pleural effusion with success

PNEUMONIA.

R. Shingleton Smith, M.D., B.Sc., F.R.C.P.

As regards the genesis of pneumonia, Dr. W. W. Pennell[1] discusses the question whether pneumonia is a general fever or a local disease. Bacteria, he believes, play only a secondary part. The inflammation produced experimentally by pure cultures differs from that of the primary cultures. There is not an exact analogy with the so-called specific diseases. The infectious character of the disease is not observed in country districts.

As against the specific character are the following arguments: (1,) More than one germ is found; (2,) Patients are liable to subsequent attacks; (3,) It is not contagious; (4,) There are no prodromata;

(5,) There are no sequelæ ; (6,) There is a distinct crisis unless peri-infiltration or abscess results ; (7,) Antiphlogistic treatment will often abort the disease.

The essential factors in the etiology of the disease are believed to be threefold : (1,) Predisposition ; (2,) A loss or lack of normal tissue resistance ; (3,) An exciting cause.

On the other hand, Emmerich[2] claims that an outbreak of pneumonia may be prevented by protective injections. Immunity is to be obtained by injections of blood or juice from the tissues of immunized animals. Herzog,[3] who has studied the experiments of Emmerich and observed his results, considers them very favourable, and they seem to him to warrant the belief that the juice of the immunized rabbits, as prepared by Emmerich, will not only confer immunity, but also obtain cures.

Treatment.—Dr. Sidney Coupland, at the annual meeting of the British Medical Association, spoke in favour of the *restorative method*, remarking that in every case of acute pneumonia there are two main indications to be met by treatment—the systemic effects of the virus, and the local pulmonary lesion. Of antipyretics he inclined to use cold as against drugs. Quinine was the safest of antipyretic drugs. He preferred cold compresses to poultices. In cases complicated by delirium, if there were no disease of the kidneys nor marked bronchitis, he should employ morphine in preference to chloral or the bromides.

Dr. Boardman Reed,[4] in a lengthy paper on this subject, gives an analysis of the death-rate from acute lobar pneumonia in various hospitals and in private practice, followed by a collection of military statistics.

After quoting numerous authorities who have gained very successful results with **Aconite, Veratrum**, and **Digitalis**, Dr. Reed proceeds : "The plan followed hitherto by myself in acute lobar pneumonia has been to place the patient in a well-ventilated room, having a temperature of 65° to 70°, giving all the cold water he desires, and at first so much of simple bland nourishment as his appetite demands ; no more. When called early, my beginning prescription has usually been about as follows :—

℞ Tr. Verat. Vir. ♏ xvj | Tr. Opii Deod. ♏ xx to xxx
Vin. Antim. f℥j | Liq. Ammon. Acetat., q.s. ad f℥iv M.

Sig.—2 teaspoonfuls in a draught of water every two hours, day and night.

"I have never found it necessary to increase these doses, but in an exceedingly violent case in a robust person should not hesitate to

make the dose of the veratrum 1½, or even 2, minims every two hours, until the circulation came under control. In addition, 2 grains of quinine have usually been administered three or four times a day.

"In asthenic cases the dose of veratrum has often been ½ a minim instead of 1 minim (though the larger dose has never been observed to depress to any hurtful degree), and then a strong tincture of phosphorus, 1 to 1000, has generally been administered in 1 minim doses each alternate hour."

The paper concludes as follows: "(1,) That water locally applied, either by wet-packs or in the form of baths, after the Brand method, is the most efficient single remedy or therapeutic measure for acute pneumonia; (2,) That either veratrum viride or aconite can accomplish more than any other single drug in the first stage, and that the same is true of digitalis as to the second stage; (3,) That a combination of one of these cardiac sedatives with opium and diaphoretics affords not only a safe but eminently successful internal treatment for the first stage of acute pneumonia, being capable of aborting the disease when its administration is begun near the onset, and repeated at short intervals, day and night; (4,) That venesection is no longer an indispensable resource in managing the disease, since other remedies have been found to accomplish the same results more surely and more pleasantly."

As indicative of the high mortality in hospital cases, we quote the following from the St. Bartholomew's Hospital Reports, vol. xxvii., 1891:—

"Pneumonia: two hundred and forty-eight cases; discharged, two hundred and fifteen; died, thirty-three; mortality, 13·3 per cent. for all ages.

"Excluding children under twenty, there were one hundred and twenty-one cases; discharged, ninety-one; died, thirty; mortality, 24·8 per cent. for adults."

The prognosis of pneumonia is ably described by Drummond.[5] That the heart is the chief source of danger all are agreed. Dr. J. M. Anders[6] describes the causes of cardiac weakness as threefold. We may have an absorption of toxic ptomaines as a result of the disease process, with a weakening of the heart muscle. There may be pulmonary obstruction, produced by the presence of the exudate acting as a local barrier to the integrity of the circulation. Finally, we may have the formation of cardiac thrombi, which are found in the right ventricle; the latter becomes dilated, and thus there is failure of heart power.

Dr. A. H. Smith,[7] of New York, in a paper read before the Berlin

Medical Congress in 1890, called attention to the interference with the circulation produced by the engorgement of the lung, and showed that the *right heart*, and not the heart as a whole, was the main source of exhaustion, and that the character of the second pulmonary sound was a better guide to the conditions present than the pulse.

The treatment, therefore, so far as the circulation is concerned, consists in relieving the right heart by increasing the capacity of the arterial system, and by diminishing the pulse-rate.

As a means of dilating the cutaneous blood-vessels and producing diaphoresis, Dessau suggests spirits of **Nitrous Ether, Dover's Powder**, or spirits of mindererus. The warm bath at 95° F., or sponging the entire body with water at 116° F., is also recommended. The warm bath and hot sponging are given for the purpose of dilating the cutaneous vessels and inducing the diaphoresis, and should be so conducted as to accomplish these ends. Conjointly with these means, the use of friction to the skin may be advantageously employed.

Treatment by digitalis has an ardent advocate in Petresco,[8] whose doses are enormous, amounting to 90 grains of the leaves in twenty-four hours. These doses were well borne, and no case of poisoning occurred.

Balfour[9] has also warmly advocated digitalis in combination with chloral. The dose must vary with the age of the patient : for adults, 20 grains of chloral, dissolved in a ½ ounce of infusion of digitalis, and subsequently ¼ of this dose every hour until the temperature falls to normal ; this, according to Balfour, it rarely fails to do.

Dr. Hershey[10] strongly recommends the *hot infusion of digitalis.* He has used it in twenty cases, commencing in each instance with a dose of 10 grains of calomel. The infusion was given every hour as hot as the patient could drink it. In from six to ten hours profuse perspiration occurred in every case, followed in twelve cases by a normal temperature. The dose used was 1 tablespoonful of the infusion. It is necessary to watch the circulation ; and in case of a sudden lowering of the pulse rate, the infusion should at once be stopped, as this would be an indication that the desired effect of the remedy had been obtained.

In the face of the accumulating evidence of numerous good observers, and of the fact that the restorative treatment of pneumonia, as judged by the results, has been a disastrous failure, it becomes a question whether there is not more safety in heroic doses of a dangerous drug, than in the unchecked processes of an exceedingly fatal disease.[11]

Delirium in pneumonia has been commented upon by Robert.[12]

When due to hyperæmia of the brain, he treats it by **Ice** to the head, **Bromides, Chloral Hydrate,** or **Paraldehyde** and **Aconite.**

The reporter has found that **Chloralamide** gives excellent results in the sleeplessness and delirium of pneumonia. In one case as much as 120 grains were given in one night, and the patient after a long sleep was convalescent.

Drs. Lauder Brunton and Prickett[13] record a case of pneumonia in which the patient was apparently moribund, where very remarkable but temporary effects were produced by the injection of **Strychnine** and the inhalation of **Oxygen.**

The use of oxygen has been advocated by numerous writers both in England and America. (*See* "Oxygen," p. 39.)

REFERENCES.—[1] "Med. Rec.," July 2, 1892 ; [2] "Annual Univ. Med. Sci.," vol. i., A-3, 1892 ; [3] Ibid. ; [4] "Therap. Gaz.," March 15, 1892 ; [5] "Lancet," March 25, 1891 ; [6] "Med. Rec.," July 2, 1892, p. 21 ; [7] "Therap. Gaz.," Nov. 16, 1891 ; [8] "Med. Ann.," 1892, p. 407 ; [9] "Edin. Med. Jour.," Nov., 1891 ; [10] "Practitioner," Nov., 1891 ; "Philad. Med. News," July 18, 1891 ; [11] "Bristol Med. Chi. Jour.," Sept. 1892, p. 196 ; [12] "Cincinnati Lancet Clinic.," Nov. 14, 1891 ; [13] "Brit. Med. Jour.," Jan. 23, 1892.

Synopsis.—(Vol. 1892, p. 403.) Fenwick found **Digitalis** and **Quinine** of little use in sthenic cases ; **Sponging** with water of 116° F. reduced temperature better than the ice bag or cold pack. In croupous pneumonia Petresco uses **Digitalis,** 75 to 150 grs. of the leaves as infusion during twenty-four hours, and claims to cut short the attack Bosley employs **Salol,** 10 gr. dose for adults, combined with **Quinine** as antipyretic. **Inhalations of Oxygen** were successfully used in one case by Blodgett. Quinan advocates **Early Bleeding** in sthenic cases, followed by **Tartar Emetic** in minute doses, with **Calomel** and **Opium, Poultices,** and later on **Blisters** and **Plenty of Nourishment.** Still later he gives **Ammonia Muriate** with **Tincture of Opium** and **Tarar Emetic** in small doses.

PNEUMONIC GANGRENE.

R. Shingleton Smith, M.D., B.Sc., F.R.C.P.

Dr. Edward F. Wells,[1] Chicago, describes this as an event of rare occurrence, liable to occur in subjects of diabetes, insanity, alcoholism, and various other disorders, but not necessarily fatal.

Various surgical methods of treatment are discussed, and the following propositions are laid down : (1,) An operation should never be undertaken in any case in which the seat of diseased action cannot be definitely located ; (2,) In case the secretions and necrotic *débris* find ready exit, surgical measures are not required so long as the patient is improving ; (3,) When gangrene is extensive and has become disintegrated, exit should be afforded the putrid matters by an external opening ; (4,) Surgical interference is imperatively demanded when egress is not freely given to secretions and gangrenous *débris* ; (5,)

External opening should be of sufficient size to allow passage of contents ; (6,) Careful curetting with a guarded blade might be practised ; (7,) If gangrenous matter is discharged into pleura, immediate operation is needful ; (8,) If whole lobe be gangrenous, the question arises of ablation of the affected portion of the lung.

REFERENCE.—[1] "New York Med. Jour.," Aug. 20, 1892.

PNEUMONOMYCOSIS. *R. Shingleton Smith, M.D., B.Sc., F.R.C.P.*

Fürbringer, of Berlin, reports a case of this kind. The expectoration, which was hæmorrhagic in character, possessed an odour of fresh yeast, and this was discovered to be due to numerous plugs consisting almost exclusively of the thrush fungus. Inspection of the mouth and throat showed a completely normal mucous membrane ; and the continuance of the phenomenon for several weeks, notwithstanding careful disinfection of the mouth, left no doubt of its pulmonary origin. The plugs resembled millet and sago grains, and were of a greyish white to greenish colour and soft consistence. Microscopically, besides pus cells, fatty *débris*, and epithelial elements, they contained a net-work of jointed threads with numerous round and oval light-refracting conidia in groups. In other plugs, besides the above, were to be recognized the short rods described by Leyden as leptothrix of fungoid nature.

POLIOMYELITIS. *Græme M. Hammond, M.D., New York.*

Dr. J. T. Eskridge reports an interesting case of poliomyelitis occurring with perineuritis in a man thirty years of age. The patient had had no venereal disease, and had never indulged immoderately in sexual intercourse or in alcoholic stimulants. The symptoms of motor paralysis with atrophy were characteristically sudden in appearance and rapid in development. In speaking of the treatment of this condition, Dr. Eskridge advises that in the acute stage the patient should be kept in bed and lying on the side, or in the semi-prone position, if it does not cause too much discomfort. If the case is seen early, **Dry** or **Wet Cups** to the spine near the seat of the inflammation may do good, the former in the weak, the latter in the robust patients. In this stage **Leeches** would do good if timely applied. **Mustard Plasters** over the spine are indicated in this stage. **Ice Poultices, Warm Salt Bags**, or the alternate applications of heat and cold to the spine may be employed with advantage. Free diaphoresis should be kept up at first, either by warm vapour baths, occasional hot packs, or by copious drinks, in which some convenient diaphoretic, such as the spirits of mindererus, may be added. The bowels should be kept loose, and careful attention should be paid to the digestive

organs. After the acute stage is over, **Arsenic** and **Strychnia** are valuable agents, to which iron and quinine may be added as occasion may seem to indicate. **Cod-liver Oil** is an excellent tonic in these cases, especially in children, to whom it may often be given by rubbing it well into the skin. Electricity, as a rule, should not be employed before the end of the third or fourth week. When a moderate faradic current causes contraction of the muscles it meets every indication, but usually the slowly interrupted galvanic current will be more serviceable. Massage is beneficial in maintaining the nutrition of both muscle and skin. The paralyzed parts should be well protected from the cold, as the temperature in them is always lowered, and their nutrition is less active than in the unaffected limbs.

REFERENCE.—"New York Med. Journ.," Dec. 26, 1891.

POLYPUS OF NOSE. (See "Nose.")

PREGNANCY.

Synopsis.—(Vol. 1892, p. 411.) *For Vomiting*, **Cerium Oxalate**, 4 to 5 gr. doses in pill, twice daily; **Potassium Bromide**, 20 gr. doses, thrice daily; **Iced Champagne**; **Subnitrate of Bismuth**, in 20 gr. doses, and **Dilute Hydrocyanic Acid**, *e.g.*, ℞ Ac. Hydrocyan. Dil. ♏ 2; Sod. Bicarb. gr. 20; Infus. Gent. Co. ad. ℥j. To be taken effervescing with Citric Acid, gr. 16. **Morphine**, hypodermically, or as suppository. Wertheimer used the **Bromides of Potassium, Sodium, and Ammonium**, a dose every two hours, successfully. Gottschalk advised **Menthol**: ℞ Menthol gr. 15, Sp. Vin. Rect. ℥vj, Aq. ad ℥vj, Sig. ℥jss hourly. Armand Routh paints the cervix and the end of the canal with **Iodine**. Copeman slightly dilates the cervix when all other remedies fail to stop vomiting. Aulde advises ℞ Acid. Arsenios., Ext. Ignatiæ āā gr. ss.; Pulv. Ipecac., Ext. Cascar. Sagrad. āā gr. 15; Ol. Gaultheriæ gtt. ij. M. Ft. Pil. 20. One after meals, using a dry diet, and fluids chiefly between meals (p. 18).

PREGNANCY (Extra-uterine). *John W. Taylor, F.R.C.S.*

The most important contribution to the literature of extra-uterine pregnancy during the past year is contained in Mr. Bland Sutton's book on "Surgical Diseases of the Ovaries and Fallopian Tubes."

The third section, entitled "Tubal Pregnancy," deals in a compact form with all the various questions connected with this subject, and while much that is written in a comprehensive treatise must necessarily at this stage be tentative and incomplete, there is no single book on the subject which is of equal value to the general practitioner.

All modern writers now accept the view that extra uterine pregnancy is *tubal* in its origin, whatever may be its subsequent mode of extrusion or of growth. Any variations spoken of (such as "broad ligament" or "abdominal" pregnancy) must therefore be regarded as later developments of a tubal gestation. The only possible exception to this rule is "ovarian" pregnancy which, if it ever occurs, is supposed to originate in the ovary itself.

Tubal Abortion.—One of the chapters in Mr. Sutton's book treats of "Tubal Abortion," a term which has been used for the description of a pregnancy in the Fallopian tube, which is extruded at an early stage from the fimbriated end of the tube without definite rupture.

Mr. Lawson Tait, at a meeting of the British Gynæcological Society on March 10th, read a short paper by himself and Dr. Christopher Martin, in which the existence of any special class of case deserving of separate recognition under this title (tubal abortion) was emphatically denied, and the term was described as erroneous and misleading.

At a later meeting of the same society, when a paper was read by the writer (Mr. John Taylor) on several cases of ectopic gestation, the subject was again discussed, one of his cases being evidently of the same class as those described by Mr. Bland Sutton, and others. In this case, however, there had been no attempt at extrusion of the pregnancy, and hæmorrhage had occurred from the uterus as well as from the open fimbriated end of the tube, and the writer, while recognizing the class of case as distinct and worthy of separate recognition, considered the term of tubal abortion as unsatisfactory.

Abdominal Pregnancy.—The record of cases of extra-uterine pregnancy, in which the child has been found more or less free within the abdominal cavity, is gradually increasing.

In addition to the cases of Mr. Jessop, of Dr. Champneys, and of Mr. John W. Taylor, three cases have been reported this year, one by Mr. Lawson Tait,[1] in which a fœtus of full term was removed from among the intestines, and round which nearly complete amniotic membranes were to be seen, and the others by Dr. Berry Hart.[2] One of these latter was a case of Prof. Simpson's, in which a dead fœtus was removed from the peritoneal cavity, the placenta (untouched) lying beneath the pelvic peritoneum. The other case was one in which Dr. Halliday Croom removed a dead child from the abdomen, the fœtus and amniotic sac being in the cavity of the peritoneum, and the placenta in the Fallopian tube.

Ovarian Pregnancy.—Most modern writers have been sceptical as to the existence of any true form of ovarian pregnancy.

Mr. Tait[3] has suggested that those cases which have occasionally been described as ovarian, are really broad ligament pregnancies which have, by their growth, caused spreading out of the ovary as a thin layer on the wall of the gestation-sac; in the same way as the ovary of the same side is frequently altered by the growth of a parovarian cyst.

Any extra-uterine pregnancy of supposed ovarian origin should be examined in the light of the criticism here noticed.

On the alleged Growth of the Placenta in Extra-uterine Gestation after the death of the Fœtus.—An important paper, with this title, by Dr. Berry Hart, was published in the "Amer. Jour. of Obstet.," vol. xxv., No. 6, 1892.

In this he combats the belief that the placenta may grow after the death of the fœtus, holding that "the increased bulk of the placenta is produced only during the life of the fœtus, and not after its death."

Papers on Diagnosis.—A paper by Dr. Cleghorn, of Blenheim, New Zealand (with notes by Dr. Shaw-Mackenzie), was read at the British Gynæcological Society, on May 12th, 1892, on "The Diagnosis and Treatment of five cases of Tubal Gestation." In this, Dr. Cleghorn attaches considerable importance to the pulsation of vessels felt on vaginal examination, and to the passage of decidual casts or shreds as points in diagnosis. A chart is appended to this paper, in which the leading features of each case are presented in tabular form. In many respects this forms a good guide for the report of similar cases, and if a sufficient number were so tabulated by competent observers the consequent deductions from these would be of very great value.

A paper on "The Diagnosis of Extra-uterine Pregnancy," by Mr. John W. Taylor (based on the experience of twenty-four cases) was read at the Annual Meeting of the Shropshire and Mid-Wales Branch of the British Medical Association, on June 23rd, 1892, and published in the "Lancet" for Sept. 17th. In this the writer dwells on the character and signs of the "tubal tumour," which forms early in the history of the pregnancy. He believes that primary rupture, with sudden and perhaps fatal hæmorrhage, is peculiarly liable to occur at the fifth or sixth week, and that if the pregnancy be prolonged beyond this stage, the second most fatal period occurs about the close of the third month, when the pregnancy begins to rise from the pelvis into the abdomen. The tumour then met with is described, and the subject is illustrated with diagrammatic sketches.

The possibility of mistakes in diagnosis is considered with reference to: (*a*,) Retroflexion of the gravid uterus; (*b*,) Pyosalpinx with amenorrhœa; (*c*,) Malignant tumour of abdomen, with ascites; (*d*,) Normal pregnancy, complicated with abdominal tumour.

At the Annual Meeting of the British Medical Association, a paper was given by Dr. Edis, on "The Diagnosis of Early Ectopic Gestation," and published in the "Brit. Med. Jour." for Oct. 22nd, 1892. One case is reported in detail, and the differential diagnosis is considered between extra-uterine pregnancy and (*a*,) Pelvic hæmatocele without pregnancy; (*b*,) Threatened abortion; (*c*,) Retroflexion of the gravid uterus; and (*d*,) Ovarian cyst, with twisted pedicle.

Cases of special interest recently reported:—(1) Cases of operation for acute hæmorrhage: Dr. Gow and Mr. Bowlby, "Lancet," April 30th,

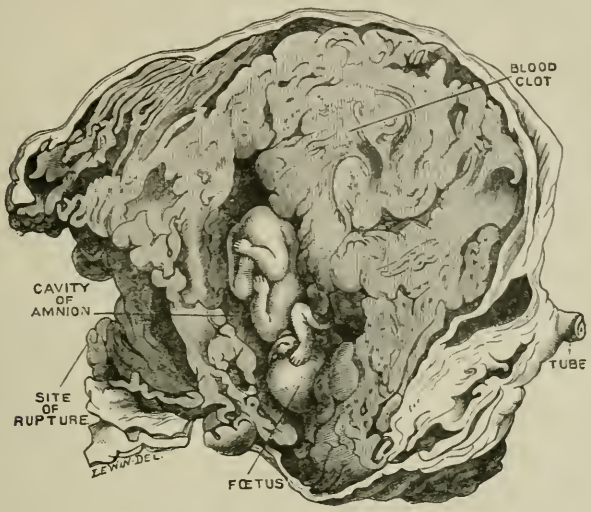


Fig. 57.—The left tube in section.

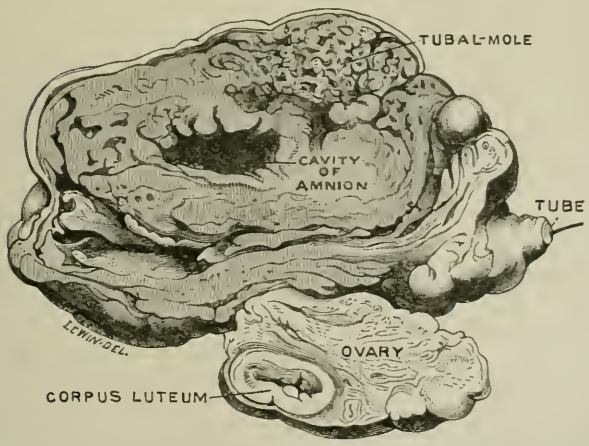


Fig. 58.—The right tube in section, to show the tubal mole or apoplectic ovum.

1892; Mr. A. E. Morison (Case iii.), "Ed. Med. Chir. Soc.," Dec.

2nd, 1891; Mr. John W. Taylor (Case ii.), "Brit. Gyn. Jour.," Aug., 1892; Dr. Edis, "Brit. Med. Jour.," Oct. 22nd, 1892.

(2,) Cases of double tubal pregnancy: Dr. Walter, "Brit. Med. Jour.," Oct. 1st, 1892 (Illustrated); Dr. Savage, "Brit. Med. Jour.," 1892, pt. 1, p. 556.

Drawings of the parts removed in Dr. Walter's case are shown on page 445. In addition to their special value as illustrations of double tubal pregnancy, the drawing of the left tube (*Fig.* 57) is typical of an early tubal pregnancy in which the fœtus is distinct and well formed, while the drawing of the right tube (*Fig.* 58) is typical of a tubal mole.

(3) Case of repeated tubal pregnancy in the same tube: Mr. John W. Taylor (Cases ii. and vii.), "Brit. Gyn. Jour.," Aug., 1892.

TREATMENT (*Remarks on*).—Recent writers are almost unanimous in recommending the early removal of an extra-uterine pregnancy by operation. The danger of this when done by a skilled operator is comparatively small, nearly all the operations of election being followed by success. Operations for acute hæmorrhage, and while the bleeding is going on, are (and must always be) attended by considerable mortality, and operations for advanced ectopic gestation have special dangers, chiefly referable to the placenta and its site; but *early operation for extra-uterine pregnancy before dangerous hæmorrhage has occurred* is a remarkably successful proceeding, as numerous reports of cases testify.

Even some of those who recognize that a proportion of cases recover without operation—the ovum being destroyed by a hæmorrhage, and disappearing with the absorption of the hæmatocele—are careful not to use this as an argument against operative interference. (*See* Werder on "Some Moot Points in Ectopic Gestation," "New York Med. Jour.," Jan. 23rd, 1892; and Taylor, "Brit. Gyn. Jour.," Aug., 1892.)

Several American surgeons recommend the use of **Electricity** in the early stages of ectopic gestation. This practice is almost exclusively transatlantic, and has no following either in England or on the continent. It is undoubtedly occasionally successful, but its risks and uncertainty cannot compare with the precision of surgical treatment. It is, moreover, exceedingly difficult to estimate the true value of the reports of cases submitted to this treatment, as a possible mistake in diagnosis would vitiate every conclusion. These remarks apply with considerable force to a recent case in which the use of electricity is supposed to have caused a tubal pregnancy to become intra-uterine. (*See* Dr. C. S. Cole and Dr. Grandin, "New York Med. Jour.," Dec.

26th, 1891 ; *see* also "Discussion on Treatment," in "Amer. Jour. of Obst.," for Dec., 1891.)

Treatment by injections of **Morphine** has been employed by Winckel in seven cases. Two of the patients died, and five recovered. (*See* "Annals of Surgery," June, 1892.)

REFERENCES.—[1]Tait, "Brit. Gyn. Jour.," xxx. p. 190 ; [2]Hart, "Am. Jour. of Obs.," xxv. 6, 1892 ; [3]Tait, "Med. Chir. Soc." June 2, 1892.

PROSTATE (Diseases of). *E. Hurry Fenwick, F.R.C.S.*

Mr. Mansell Moullin,[1] in a series of lectures which are conspicuous for their thought and labour, reviews the question of operative treatment of the enlarged prostate. He maintains that the prostate gland is a purely sexual organ, and so long as it is normal, it has nothing to do with micturition ; that its overgrowth is a purely local affection ; that the complications are the direct result of the obstruction ; and that removal of the obstruction will prevent their development.

In criticising the operations, which have been devised for the relief of the complications arising from enlargement of the gland, he asked three questions. The answers to these are based upon a review of ninety-four cases which he has collected from various sources. After the removal of the obstructing lobe, will the growth recur and render the operation valueless? Definite recurrence has been noted in one case, and that within nine months, but the clinical evidence is very satisfactory, a large proportion of the patients operated upon regaining power over their bladder and retaining it unimpaired for three or four years.

The next question propounded was, Whether the bladder will recover upon the removal of the obstacle? In dealing with this, Mr. Moullin says : "The question of recovery of the bladder depends partly upon the condition of the patient as regards general nutrition, partly upon the extent to which the muscular coat has been ruined by over-distension, cystitis, and the repeated use of catheters. Nineteen cases in all failed, but in four of these either the whole obstruction was not removed, or no attempt was made to close the suprapubic opening ; in two others there was already a fistula owing to the previous removal of a vesical tumour, and another was a very feeble old man who became insane shortly after. These, at least, must be deducted, and in several others there were mitigating circumstances. It cannot, however, be too plainly stated that the real reason why the bladder failed was that the operation was performed too late. Sir H. Thompson has written that habitual catheterism (for retention in cases of enlarged prostate) for two years will permanently destroy the power of the bladder to empty itself ; and although McGill has

shown that this is by no means so invariable or so positive, it is certainly one of the strongest arguments in favour of early operation that the chief palliative measure that replaces it, may within two years —*will*, according to Sir H. Thompson—so ruin the bladder that it can never recover."

The third question was whether the operation does not involve too great a risk to life. In answering this, the lecturer considered the perineal operation separately from the suprapubic. Of the thirty-eight cases of perineal operation undertaken for this purpose, and not as an after-thought during lithotomy, only three died, and one of these was eighty years of age already, and in another the method adopted was unsuitable. The mortality from the suprapubic was 20 per cent.

New operative methods of treating the Enlarged Prostate.—Pyle[2] describes an operation for removal of the prostate which he performed with success on a patient aged seventy. The space immediately in front of the rectum and behind the bulb was chosen as the route. A semicircular incision was made immediately in front of the anus, and carried through the connective tissue between the bulb of the urethra and the rectum. This incision gives ready access to the field of operation, and there is little hæmorrhage. After the skin and tough fascia have been divided, the handle of the scalpel may be used to separate the loose connective tissues between the rectum and urethra, until the fascia covering the levator ani is exposed. After division of these structures the enlarged prostate will be seen. The finger is the most convenient instrument in this operation, and should be freely used in opening up the deeper parts. The prostate is now seized with a pair of vulsellum forceps, and dragged to the surface, and the lobes removed separately if the gland is large. A curved steel sound should be introduced into the bladder before the operation, to indicate the situation of the urethra, and to keep the base of the bladder from slipping upwards whilst the prostate is being separated.

Fig. 59.—The Prostatectome

Mr. A. T. Norton[3] describes his form of prostatectome, made by Weiss, which works on the principle of a lithotrite. It consists of two blades, both of which are cutting, with keen edges, not riding over one another, but fitting edge to edge (see *Figs.* 59 and 60).

The sliding blade rises with a long incline in order to slip back over the middle lobe of the prostate when both are in the bladder. The cutting edges are in the form of a scoop, to receive the segment removed. It is passed with the blades closed, over the prostate and turned down, *through a perineal incision.* The sliding blade is then withdrawn till it is felt to slip over the enlargement ; and it is then forced home, removing a section of prostate. The mucous mem-

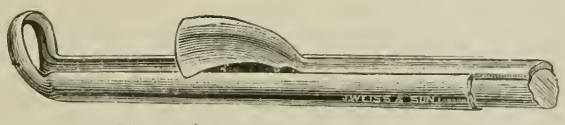


Fig. 60.—The Blades of the Prostatectome.

brane is not as a rule cut through, and has to be severed with a knife in the perinæum. There is practically no bleeding. The after-treatment consists in washing out the bladder with boracic acid solution every half-hour for ten hours, and every hour for the next twelve hours through a prostatic tube. The prostatic tube is removed within a week, and the perineal wound allowed to heal. Two successful cases are reported.

K. Eigenbrodt,[4] of Bonn, reports five cases in which Prof. Trendelenburg operated for the radical cure of prostatic enlargement, and expresses in the following propositions his views as to the value of this treatment : (1,) It has been shown by experience that a radical operation is possible in almost every case of obstructive enlargement of the prostate. Such treatment consists in suprapubic prostatectomy in which all those portions of the enlarged prostate which protrude into the bladder are, if possible, removed ; (2,) The prospects of prostatectomy are better the earlier the operation is performed, and operations done early and before the development of cystitis are to be recommended in all cases in which the surgeon may avoid setting up inflammation of the bladder by the operation itself ; (3,) Even in far advanced cases much relief may, under certain circumstances, be afforded by the operation, and the patient may regain the function of voluntary micturition ; (4,) Patients who have been apparently cured by the radical operation are apt to be subsequently affected with persisting weakness of the bladder and accumulation of residual urine ; (5,) In obstructive hypertrophy of the prostate the hindrance to the flow of urine does not consist so frequently as is generally supposed in a valvular occlusion of the internal meatus of the urethra by a prominent lobe of the gland, or by a displaced portion of the vesical wall. The hindrance is more frequently the result of a regular and general

enlargement of the vesical portion of the prostate associated with the formation of a cul-de-sac in the bladder. Should the surgeon be unable in the latter class of cases to remove all the portion of the enlarged prostate which projects into the bladder, he should attempt to promote a free discharge of urine by making a deep wedge-shaped incision at the posterior border of the internal urethral orifice.

REFERENCES.—[1] Moullin, "Brit. Med. Jour.," June 18, 1892; [2] Pyle, "Brit. Med. Jour.," Aug. 17, 1892; [3] Norton, "Med. Press and Circ.," Jan. 27, 1892; [4] Eigenbrodt, "Beiträge zur klin. Chir.," No. 8, 1891; [5] "Brit. Med. Jour." Supp., Nov. 7, 1891.

Synopsis (Vol 1892, p. 413) Chronic inflammation in early life requires careful attention to diet, and regular action of the bowels. Locally **Iodoform Suppositories**, ¾ to 1½ grs each, are used at night after an enema. Application of a 1 or 2 % solution, **Nitrate of Silver**, to the posterior urethra, once or twice weekly. Introduction of large **Metal Sounds**, and Winternitz's **Psychrophore**, are also frequently beneficial. In chronic retention of urine, due to enlarged prostate, the following is a useful vesical irrigant: ℞ Hydrarg. Chloridi Corrosivi, gr 5; Ammonii Chloridi, gr 20; Spir. Gaultheriæ, ℥ss; Acidi Borici, ℥j; Glycerini, ℥viij. M. Half-an ounce to 7 fluid ozs. of water, at 110° Fh., and 2½ ozs. Peroxide of Hydrogen solution, using 2½ ozs. at a daily sitting.

PRURIGO.

T. Colcott Fox, M.D.

Ehlers analyzed the records of, and tried to trace, all the cases treated in the last twenty-eight years in the Communal Hospital of Copenhagen. Of two hundred and seven patients, one hundred and thirty-seven were males, and seventy females. He finds, as Hebra stated, that the malady declares itself at from two to seven years of age for the most part, but agrees with Besnier that it may occasionally commence in youth and adolescence, and even early manhood. Though there is no absolute rule, the malady is generally aggravated in summer. Allowing for the proportion of people in each social station, prurigo occurs with a like relative frequency in all ranks of society; family prevalence is not uncommon. To say prurigo is incurable is too absolute a statement, and after puberty its intensity declines. Ehlers evidently inclines to the view that the primary symptom is a pruritus, and the papules or other objective lesions are secondary. **Baths** are of the greatest importance in the treatment, sea-baths in summer, warm baths in winter, given daily with frictions, with a 10 per cent. **Naphthol Pomade.** The treatment should be continued after the disappearance of all lesions.

Besnier has published a preliminary note on the "diathetic prurigos," starting with the view that Hebra's definition was too rigid, and that it excluded several closely allied conditions. As a ground-work, he affirms that the capital symptom of diathetic

prurigos is the intense pruritus commencing ordinarily in infancy, and provoking lesions of which *none are specific*. The skin becomes secondarily papulated and thickened or eczematous, and Besnier proposes to call these processes *lichenisation* and *eczematisation* of the skin. The banal lesions of prurigo are to be distinguished from the specific or special lesions of a pruritic dermatitis, such as lichen planus and dermatitis herpetiformis.

E. Vidal suggests the name *lichen polymorphe ferox* for the condition now commonly denominated prurigo of Hebra, for the reason that prurigo is one of the most complete types of the pathological process, which he calls *lichen*. From an anatomo-pathological point of view, prurigo is a chronic papular neurodermatitis ; pathogenetically, it is a dermatoneurosis. Vidal holds it is a complex malady. There is a pre-existent state of nervous erethism ("nervovisme") marked by great itching, to which succeeds, by reason of the scratching and rubbing, the neurodermatitis, the formation of urticaria wheals ; later, papules and "lichénisation," with induration of the derma, etc. The polymorphism of the eruption, its chronic course, and general incurability are to be explained by the existence of a lymphatic disposition (formerly called scrofulous diathesis) taken in the sense that the lymphatic system is exaggerated in its development and vulnerability. Vidal has occasionally seen prurigo commence in youth, and once at thirty-five years of age.

The proper treatment is a preventive one by protecting the skin against the constant scratching and rubbing, and this is well carried out by **Toiles Emplastiques,** amongst which cod liver oil plaster, with menthol or naphthol added, is one of the best. Pomades of naphthol, and glycerine of starch, with the addition of tartaric acid 5 per cent., and menthol 2 to 5 per cent., are useful.

Klein recommends the following :—

℞ Lanolin pur. anhydr.	50 grms.	Aq. destillatæ	30 grms
Vaselin	20 ,,		

From the great quantity of water present, this forms a very cooling application.

Saalfeld uses warm and tar baths, Wilkinson's or naphthol ointment 2 to 3 per cent. In serious cases hypodermic injections of pilocarpine.

For *senile prurigo*, E. Besnier employs the following :—

℞ Acid Phenic	4 parts	Acid Acet. aromat.	200 parts

Dissolve : Wash the whole surface of the body every evening with water at a temperature of 40 C. (about 100° Fahr.) to which is added per litre (a little less than a quart) two tablespoonfuls of the above

lotion. Dry, and then powder the skin with one or other of the following preparations :—

Salicylate of Bismuth 20 parts	Powdered Starch 90 parts

or

Finely Powd. Salicy. Acid 20 parts	Powdered Starch 180 parts

REFERENCES.—Klein, "Therap. Mon.," Jan., 1892; Saalfeld, "Arch. f. Kinderkeilhunde," xiv. Bd. Heft. i. ii.; Ehlers, Nordiskt. "Med. Arkiv. Arg.," 1892, No. 2, 24; Besnier, "Union Méd.," 1891. "Ann. de Derm.," 1892; Hutchinson, "Arch. of Surg.," Oct., 1892; Vidal, "Ann. de Derm. et de Syph.," Sept. to Oct., 1892.

PRURITUS.

Synopsis.—(Vol. 1892, p. 417.) Lange used **Arsenic** internally, and **Carbolic Acid** compresses locally. In two of his successful cases abundant uric acid and water were found by **Sodium Bicarbonate** and **Lithium Carbonate** used internally.

Butte recommends **Guaco Decoction**, if eruptions are not weeping. Corlett recommends **Silk Underclothing**, **Ichthyol** internally, and **Resorcin**, **Menthol**, or **Ichthyol** externally, *e.g.*, ℞ Menthol, 10 %; Glycerin, ℥ij; Aq. ad ℥iv: ℞ Ichthyol Ammon Sul., 3 to 10 %; Glycerin ℥ij; Alcohol, Aqua āā q.s. ad ℥iv: ℞ Resorcin (Merck's), ℥j; Glycerin, ℥ij; Aq. ad ℥iv. White considers **Carbolic Acid** best to control itching. Ohmann-Dumesnil recommends: ℞ Hydrarg. Bichlor. gr. jss; Ammon. Chlor. gr. 2; Ac. Carbolici ℥j (more or less); Glycerini, ℥ij; Aq. Rosæ ad ℥viij. Lustgarten in pruritus ani uses **Oleate of Cocaine** suppositories. Blaschko got excellent results from **Antipyrin** internally, and **Tar Baths** and **Naphthol Ointment** externally for lichen urticatus of infants. Webster and Murray cured pruritus vulvæ by removal of superficial tissue around clitoris, vestibule, and meatus, by **Knife** or **Galvanic Cautery**.

PSORIASIS.

Synopsis.—(Vol. 1892, p. 419.) Polotebnoff advises **Sea Bathing**, warm or cold. **Bromine Salts**, if nervous symptoms are prominent, then **Arsenic** in large doses; **Ergot** is useful. Fabry used: ℞ Hydroxylamine Muriate, 3 to 5 grs.; Spirits of Wine, ℥jss; Carbonate of Calcium, sufficient to neutralize. Or, ℞ Hydroxylamine Muriate, 15 grs.; Pure Water, ℥jss; Calcium Carbonate sufficient to neutralize. Weissblum found Hydroxylamine set up dermatitis, and uses Aristol in light forms. Guttmann uses 10 % **Hydracetin Ointment**. The following are recommended: ℞ Ac. Pyrogallici, Ichthyol, Ac. Salicylici āā 4 to 5 parts; Vaseline, 35 parts; daily frictions in small patches on the scalp if not too irritating. ℞ Saponis Viridis, Vaselin āā 20 parts, Ichthyol, 2 parts; Ac. Salicyl et Pyrogall. āā 1 part; for isolated patches.

PSOROSPERMOSIS FOLLICULARIS VEGETANS.

T. Colcott Fox, M.B.

Boeck contributes an account of four cases of this rare and interesting disease, so that there are now about sixteen recorded. Boeck maintains that it is an epidermic disease consisting in hyperplasia, combined with premature and irregular keratosis of the cells, which

is seen especially in the interpapillary processes and mouths of the hair follicles, or rarely of the sweat glands. He thinks there may be some relation to hyperidrosis as in tyloma. Papillary hypertrophy, which is such a striking feature of the disease in certain regions, is secondary. With regard to the supposed psorosperms, he considers the capsule no other than the cell wall itself, and the contents eleidine or kerato-hyaline. They also stain differently from acknowledged psorosperms, though closely resembling them when stained with picrocarmine or osmic acid. Inoculation experiments are negative. Treatment was of no permanent benefit. Schwimmer advises destruction with the **Electro-cautery** in the early stages. T. de Amicis also records a case in a girl of sixteen years.

REFERENCES.—Boeck, "Archiv. f. Derm. u. Syph.," 1891, xxiii., p. 857, and Internat. Cong. Derm. and Syph., 1892; de Amicis, idem.

PTOSIS. *William Lang, F.R.C.S.*

The following method of operating for the relief of this defect has been devised and carried out with good results by Birnbacher. Under **Cocaine** he makes an incision through the skin over the upper margin of the tarsus so as to expose the latter through its whole length. He then passes three stout silk sutures, each threaded with two needles, through the centre and the ends of the tarsus, the lateral sutures being about 7 mm. from the centre one. The two needles of each suture are then passed beneath the skin, and brought out at the eyebrow, where the sutures are tied over iodoform pads. The distance between the lateral sutures and central one should be greater at their exit through the skin than at their insertion in the tarsus. The sutures are tightened until the lids just meet, when they are closed. Five fine sutures close the skin wound, and an antiseptic dressing is applied. At the end of three weeks the sutures are removed, and well marked bands of connective tissue now pass between the lid and occipto-frontalis.

PUERPERAL FEVER.

Synopsis.—(Vol. 1892, p. 424.) Nails should be kept short: the hands thoroughly washed and soaked in an antiseptic before the examination. **Corrosive Sublimate**, 1 in 1000, carried in pellets; one to be dissolved in a pint of water, or **Glycerine Solution of Sublimate**, gr. 10 to ʒj, which is added to a pint of water, are useful forms. **Iodine**, ʒij to a pint of water, is safer. **Antipyrin**, 10 to 20 grs. nightly, for three or four nights, has successfully arrested milk secretion.

PURPURA.

Synopsis.—(Vol. 1892, p. 426.) Koch gives **Ergot** and **Mineral Acids**, and insists upon **Rest**.

PURPURA SCORBUTICA.

Synopsis.—(Vol. 1892, p. 426.) Bertheusson administers **Sodium Salicylate**, and also **Carbolic, Citric, Sulphuric** and **Phosphoric Acids**, using **Milk Diet**, or easily assimilable foods. Locally, compresses soaked in **Aromatic Vinegar** 1 part, to **Warm Water** 3 parts, are best, and as mouth washes, **Boric Acid, Tannin**, etc.

RABIES. *Graeme M. Hammond, M.D., New York.*

In the November "Indian Medical Gazette," Assistant-Surgeon Troylucko Nath Ghose reports a case of rabies cured by eleven subcutaneous injections of **Pilocarpin Hydrochloride**, $\frac{1}{5}$ of a grain each, in the course of seven days. Before resorting to the pilocarpin, and before the spasms appeared, he excised the scar that resulted from the wound, and kept the sore open for two weeks. This relieved a shooting pain that had been felt in the scar.

REFERENCE.—"New York Med. Journ.," Jan. 2, 1892.

RACHITIS. *Henry Dwight Chapin, M.D., New York.*

The following is the method adopted by French physicians:—The utmost importance is given to the hygienic treatment first, and if the child cannot be sent to one of the special hospitals on the sea-coast where it can be exposed to sea air constantly, it is given warm sea baths for three or four minutes' duration, or salt baths with six to eight pounds of seasalt in each bath. As to the regimen, from four to five meals a day are given at intervals of three hours, consisting of rich phosphated foods with alkaline and lime salts, milk, eggs, cream, soups with pastes (Italian), smashed peas and other vegetables, and very little meat.

The drug treatment is as follows:—

Phosphates.—Powders are preferred to solutions. The hydrochloro- or the aceto-phosphates, or what is called *milk phosphates*.

Cod-liver Oil.—Commence by a teaspoonful and increase up to 5 or 6 tablespoonfuls per day. In summer time this can be used:—

℞ Fresh Butter	500 grms.	Sodium Chloride	8 grms.
Potass. Iodid.	0·25 grm.	Phosphorus	0·01 grm.
Potass. Bromid.	1 grm.		

M. Sig.—Dose 100 grammes a day, spread on bread.

This is called Trousseau's butter.

Dr. Comby prescribes this:—

℞ Cod-Liver Oil	1000 grms.	Phosphorus	0·01 grm.

M. Sig.—Dose, teaspoonful.

He says that there is no danger with this phosphorized oil, *but caution must be used.*

Kassowitz gives this formula which is well known and much used :—

R Phosphorus	0·01 grm.	Pulv. Sugar	
Lipanine	30 grms.	Pulv. Gum.	āā 15 grms.
		Aqua Destill	10 grms

M. Sig.—Teaspoonful per day.

RECTUM (Diseases of).

Synopsis.—(Vol. 1892, p. 428.) In young subjects, **Zinc Ointment**, with extract of **Belladonna** and **Opium**, should be used night and morning, and **Confection of Senna**, with **Sulphur**, used as a laxative; cracks, due to syphilis, easily give way to **Specific Remedies**. Rest, in recumbent position, is important, and various **Mineral Waters** are useful. **Division of the base of the Fissure, Subcutaneous division of the Sphincter**, or **Forcible Dilatation** under an anæsthetic, may be required.

RECTUM (Excision of). *F. S. Eve, F.R.C.S.*

We understand that Kraske,[1] has introduced an important modification of his operation for the removal of cancer of the rectum high up, in which the ordinary perineal method is not applicable. His operation, it will be remembered, consists in excision of the affected portion of the gut through a lateral opening made by dividing the sacro-sciatic ligament, and, if necessary, the removal of the lower two segments of the left wing of the sacrum; or, if sufficient room is not thereby obtained, resection of the lower part of the sacrum is performed by dividing it at the level of the lower border of the third foramen. In his earlier operations, after excision of the growth, the upper end of the gut was stitched to the lower or anal portion. This was followed by extravasation of fæces and consequent fouling of the wound. Such a casualty is now avoided by invaginating the upper portion of the bowel into the lower, and drawing the former down as low as the anus.

Dr. Montgomery[2] advocates Kraske's operation as a substitute for colotomy in rectal cancer high up. He simply stitches the proximal end of the bowel to the skin over the sacrum.

Kraske's operation has also been performed, instead of colotomy, for irremediable syphilitic strictures of the rectum, and it is stated with good results, but English surgeons are not likely at present to follow this lead.

Dr. C. B. Kelsey[3] insists on the early performance of colotomy in cases of inoperable rectal cancers in which the subsequent occurrence of obstructions may be anticipated. He gives the following indications for the performance of colotomy: (1,) In all cases of cancer which cannot be completely extirpated, where the disease is liable to produce any degree of obstruction, or is broken down and discharging into the rectum. It is possible to have cancer near the rectum which will cause no symptoms referable to the rectum, and hence furnish no

indications for operation: (2,) In all cases of incurable non-malignant ulceration where the disease is too extensive to admit of complete resection of the ulcer; (3,) In all cases of threatened obstruction where the obstruction cannot be permanently overcome by attacking it directly; for example, the obstruction due to old pelvic cellulitis in women; (4,) In certain cases of recto-vesical fistula; (5,) In cases of congenital malformation where the rectal *cul de sac* cannot be dissected out and brought down to the surface.

REFERENCES.—[1] Herezel, "Ann. of Surg.," Sept. 1892; [2] "Therap. Gaz.," July 15, 1892; [3] "Therap. Gaz.," Jan. 15, 1892.

RETROPERITONEAL TUMOURS. *A. W. Mayo Robson, F.R.C.S.*

It is usually taught that drainage is the proper treatment for retroperitoneal cysts; but in a case that I drained some months ago, the tumour rather rapidly returned, and on removing it by the transperitoneal method, I found numerous secondary cysts in its walls, so that drainage could never have been curative, whereas enucleation has accomplished the desired result. In this case the cyst apparently arose from the tissues between the spine and the right kidney. Cysts of the mesentery are rare, and are usually amenable to drainage. As a rule they should not be removed, although in one case, not yet published, I saw a colleague remove successfully a large cyst of this kind, and at the same time resect several inches of small intestine which were intimately blended with it. The patient is now quite well some months after operation.

Dr. Goggins[1] reports a very extensive cyst occupying the whole of the left side of the abdomen, which he treated successfully by drainage.

Van der Veer[2] relates the history of three cases of retroperitoneal tumour. All were of large size, two springing from the capsule of the kidney and one from the supra-renal capsule. In one case an abdominal exploration was made, but it was found impossible to remove it. In the other two cases operation was declined.

Anatomical Relations and Pathology.—The most frequent origin of these growths is in the connective tissue of the capsule of the kidney, the next most frequent seat being the supra-renals. None can be said to be absolutely benign, as there is always a tendency for them to recur locally when removed. There is from their size considerable displacement of other organs. They generally appear laterally and anteriorly on either side of the umbilicus, occasionally centrally; rarely they project posteriorly. Cysts, especially dermoid cysts, may arise from the retroperitoneum, particularly in the neighbourhood of the sacrum. As regards structure, they are generally of a mixed variety, *e.g.*, lipomyxoma, and often cystic; they may weigh as much as

eighty pounds. There is often a sarcomatous element present, or they may be pure sarcomas. Pure fibromas have also been found. They may have fat, connective tissue, fascia, muscle, or lymphatic tissue for their source, and there can be no reasonable doubt that embryonal elements which lie quiescent here may under suitable irritation be a frequent source of retroperitoneal growths.

Diagnosis.—By a process of exclusion, from tumours of the liver and gall bladder, spleen, pancreas, kidney, mesentery, and abdominal walls. Tumours of liver always move synchronously with respiration. Retroperitoneal tumours do not as a rule. Very often a line of resonance is found between the liver and the tumour. Palpation and percussion will be sufficient to exclude splenic tumours. Tumours of omentum are less fixed. The absence of digestive disturbances with fatty stools will serve to exclude the rare new growths of the pancreas. In kidney growths there is generally renal hæmorrhage or albuminuria with or without casts. Occasionally the aspirator may be of use, and a valuable adjunct to diagnosis is the rectal insufflation of hydrogen gas with distension of the stomach.

Retroperitoneal Lipomata.—Retroperitoneal lipomata, according to Terrier and Guillemain,[3] commence in the cellular tissue lying between the peritoneum and the posterior abdominal wall. In two cases described by them the tumour started in the cellular tissue on the right side of the vertebral column. These tumours grow slowly, and may, as they increase, remain behind the peritoneum, pushing before them the intestines which lie on their anterior surface, or they may insinuate themselves between the two layers of the mesentery, and thus give rise to one variety of tumour of the mesentery. In their advanced stages they form adhesions to the neighbouring organs. Histologically they may be pure lipomata, or in some cases myxo-lipomata, or in others sarcomatous myxo-lipomata. The clinical appearances of this affection are far from being characteristic, and in many cases their nature is not discovered until an operation is performed or a necropsy made. They have been diagnosed as cysts of the ovary, tumours of the kidney, and as extra-uterine fœtations. The character of the swelling may be made evident by aspiration. If a cannula is inserted in the case of ovarian or mesenteric cysts, fluid will be evacuated ; in the case of sarcomata, a few drops of blood will at once flow ; whilst in lipomata nothing will be evacuated unless the cannula is left in and moved about, when a very small amount of blood will flow out. The authors diagnosed one of their cases in this way. These tumours may attain a very large size, and then, owing to their weight and to the pressure which they set up upon the blood and

lymphatic vessels of the intestines, they give rise to diarrhœa and progressive cachexia leading to death. If the tumours are smaller and they are not actively increasing in size the prognosis is better. Owing to the size of the tumours and their extensive adhesions to neighbouring structures, their removal is a matter of considerable difficulty and danger. Eleven cases have been submitted to complete extirpation, and out of these only four recovered.

REFERENCES.—[1]Goggins, "Brit. Gynæcol. Jour.," May, 1892; Veer, "Amer. Jour. Med. Sci.," vol. ciii.; [2]Terrier and Guillemain, "Rev. de Chir.," Sep. 10, 1892.

REYNAUD'S DISEASE. *Frank J. Wethered, M.D.*

Cates reports a case of Reynaud's disease—that is, symmetrical gangrene of the extremities—in which great relief was obtained by the injection of **Nitroglycerin**, commencing with $\frac{1}{100}$ of a grain, and gradually increasing the dose up to $\frac{1}{50}$ of a grain, three times a day. The patient grew better, sores healed, and the pain disappeared like magic, so that the routine duties of life were again made possible.

REFERENCE.—"Univ. Med. Mag.," vol. iv., No. 5, 1892.

RHEUMATISM. *Frank J. Wethered, M.D.*

Dr. J. L. Hancock[1] writes that for the past two years he has been treating cases of inflammatory rheumatism with a local application of **Carbolic Acid** applied in the form of a 4 per cent. solution on a warm flannel cloth wrapped closely around the entire affected joint.

Dr. Hancock states that his custom is to leave this dressing on over night, placing it in position just before the patient retires.

Gonorrhœal rheumatism is well known to be very difficult to treat. Dr. Brodhurst[2] advises the use of **Mercurial Ointment.** He directs that the affected joints should be wrapped in lint covered with the ointment, that they should be bandaged as firmly as can be borne, and that the patient should be brought rapidly under the influence of mercury, preferably by inunction. With such treatment pain and swelling quickly disappear, and the joints resume their normal condition. At this stage passive motion should be instituted to ascertain if the motion of the affected joint is free, for lymph will have been deposited on the synovial membranes through which adhesions form. These bands soon become firm, and resist any attempt that the patient can make to move the joint.

This treatment, according to the author, never fails, if resorted to at the onset of the inflammatory stage. The knee, the hip, the elbow, and the shoulder are most frequently affected by this form of inflammation. Anchylosis may result not in one joint only, but in every articulation of the body. When, after inflammation has ceased and

passive motion has not been employed, adhesions remain and become firm, force is needed to restore mobility. This should always be used in the direction of flexion, since, when thus employed, no injury can accrue to any structure. Under some circumstances division of the flexor muscles is necessary.

The author states that ten years ago he had operated on upward of one thousand cases of fibroid anchylosis, and since that time he has never known of one instance of any accident, whether displacement or fracture, or inflammation, or injury of any kind.

An experience covering one thousand cases of anchylosis from gonorrhœal rheumatism is one so large that few surgeons are able to parallel it.

Dr. W. H. Flint has tried **Salophen** in acute rheumatism. Salophen, or acetyl-para-amydosalol, occurs in the form of white crystalline scales, almost insoluble in water, more soluble in hot water, but fairly soluble in alcohol and ether, particularly with the aid of heat, and is without taste or odour.

From his researches, this writer concludes that we possess in salophen a remedy equally potent as the other salicylates to control the symptoms of acute rheumatic arthritis, but devoid of their tendency to weaken the heart's action, to disturb the stomach, and to produce albuminuria and smoky urine. Whether these claims for salophen to superiority over the other derivatives of salicylic acid be well founded, remains to be definitely decided by accumulated statistical evidence.

References.—[1] Hancock, "Therap. Gaz.," Oct. 15, 1891 ; [2] Brodhurst, "Therap. Gaz.," May 16, 1892.

Synopsis.—(Vol. 1892, p. 434.) Gillespie speaks of great relief following injection of 2 to 5 minims 10 % **Carbolic Acid** solution into the joint cavity. **Salol Collodion** made by dissolving **Salol** 4 parts, in **Ether** 4 parts, and adding **Collodion** 30 parts, is an efficient anodyne application to the joints. Clark has found ½ oz. doses of **Cinchona Tincture** every four hours succeed, when all else failed. Male considers the **Bath** or **Cold Pack** the safest treatment of hyperpyrexia.

RHINITIS. (See "Nose.")

Synopsis.—(Vol. 1892, p. 436.) Hall anoints the interior of the nose after washing with **Eucalytus Oil** and **Vaseline** ℥j to ℥j. Phillips applies a 5 % solution of **Ichthyol** in **Keroline.**

RICKETS.

Synopsis.—(Vol. 1892, p. 443.) Mettenheimér considers that **Phosphorus** has been over-rated. The following is well tolerated by the stomach: ℞ Phosphori, ·01 gram.; Ol. Menth. Pip. Æther, 1 gram.; Sp. Æth. Sulph., 14 grams. Sig.—1 drop daily in syrup or milk, to be increased if possible. Wequer and Voute obtained great success with **Phosphorus,** the latter using it in **Cod-liver Oil,** *e.g.*, ℞ Phosphorus, 1 c. gram.; Ol. Morrh., 100 grms. A teaspoonful once daily, or in divided doses morning and evening.

RODENT ULCER.

Synopsis.—(Vol 1892, p. 445) Boeck and Unna use **Unna's Resorcin Plaster**, changed daily.

SABURRAL FEVERS.

Synopsis—(Vol. 1892, p. 446.) An emetic of **Ipecacuanha** may be used at the outset, followed by a **Vegetable Aperient** and a full dose of **Hunyadi** or **Rubinat** water the next day. Antiseptics such as **Naphthol, Naphthalin, Salol, Salicylate of Soda**, or **Bismuth, Charcoal**, etc., may be used. The diet should be light and bland, chiefly **milk** and water gruel.

SCABIES.

Synopsis—(Vol. 1892, p. 446.) The favourite sites are thoroughly inuncted for three minutes each, with 10 to 15 per cent. β-**Naphthol Ointment**, and then the whole body, and on the third day a warm bath is taken with **Green Soap**, unless there is excessive eczema

Lollis asserts that **Vaseline Ointment of Creolin** 5 per cent cures in four rubbings. The rapid cure at the Hôpital St Louis is as follows The patient is stripped and scrubbed from twenty to thirty minutes with **Black Soap** and **Warm Water**, followed by a warm bath and more soaping for thirty to sixty minutes; and lastly the following **Sulphur Ointment** is rubbed in for twenty minutes, R Flowers of Sulphur 2 parts, Carbonate of Potash 1 part, Lard 12 parts. After twenty-four hours a **Starch Bath** is given, and bland emollients applied. The clothes must be thoroughly disinfected.

SCARLATINA.

Synopsis.—(Vol. 1892, p. 447.) As preventive treatment, Smith disinfects the room by R Ac. Carbolici, Ol Eucalypti, āā ℥j; Spt Terebinth. ℥vj, 2 tablespoonfuls to a quart of water gradually vaporised over a gas stove. Every three hours the patient's body is anointed with R Ac. Carbolici, Ol Eucalypti āā ℥j; Ol. Olivæ. ℥vij, M. A gargle or spray to the fauces of 2 grs **Corrosive Sublimate** to the pint of water is used, and a solution of the same may be used to wash the ceiling, walls and floor of the apartment Severstre advises that attendants should wear a blouse, at least that can be thrown off on leaving the room; that frequent antiseptic washing of face and hands are required; linen must only leave the room to be boiled commodes must be disinfected, and antiseptic solutions and ointments must be frequently applied to mouth, pharynx and skin, the last being used for the first few days of return to every-day life. **Antiseptic Baths** must be used, attending specially to scalp and other hairy parts All clothing must be disinfected

Thorne recommends R Oil of Eucalyptus Globulus, 5 minims, emulsified with Powdered Acacia, and taken every four hours; a gargle of **Carbolic** and **Tannic Acids**, suitably diluted every hour; daily inunction with **Eucalyptus Oil Emulsion** ½ drachm to the ounce, made up with Glycerine; sprinkling the scalp and hair daily with a spirit lotion containing **Eucalyptol**, with a small quantity of **Almond Oil**. Vidal gives **Acetate of Ammonium** 35 to 90 grs daily to children. For ulcerated sore throat Manning recommends **Boric Acid** dissolved in hot water at 105° Fah., or 4 parts of carefully powdered **Boric Acid** may be stirred into 3 parts **Glycerine** heated by steam, and a large tablespoonful of this solution is dissolved in a pint of hot water Illingworth employs **Biniodide of Mercury** $\frac{1}{16}$ gr doses as a germicide (p 57)

SCARLET FEVER. *Frank J. Wethered, M.D.*

The treatment of scarlet fever, based upon the theory that the disease is due to a specific germ, is rapidly becoming more firmly grounded. It has been shown that complications which greatly increase the gravity, sufferings, and death-rate of scarlatina, may be rendered much less frequent by timely and proper preventive treatment—this consisting of the early and oft-repeated application of non-irritating germicide remedies. Dr. Lewis Smith[1] writing on this subject, maintains that the theory that pathogenic organisms occur abundantly upon the inflamed faucial and nasal surfaces in scarlet fever, and that more or fewer of them enter the system through the capillaries or lymph-channels, and cause the internal inflammations which complicate this disease, receives support from recent investigations.

The best mode of applying the treatment referred to above, appears to be spraying or irrigation with an antiseptic, such as the **Peroxide of Hydrogen,** 1 part to 4 of water for the fauces, 1 part to 8 of water for the nares, used hourly for every half-hour, or with corrosive sublimate, 2 grains to the pint of water, employed every two hours within non-poisonous limits, or with some other non-irritating but efficient disinfectant. A nasal injection should always be warm. Dr. Lewis Smith has used as an antiseptic wash for the nostrils, with apparently good result, a combination of boric acid, sodium borate, and common salt, as in the following formula :—

℞ Acidi Borici	ʒij	Sodii Chloridi	ʒj
Sodii Boratis	ʒij	Aquæ Puræ	Oj

Misce.

Sig.—1 teaspoonful to be injected into each nostril hourly.

Prof. Henoch maintains that the dangerous cerebral symptoms occasionally occurring in scarlet fever, are due to continual high fever, and that the best mode of combating this is by the use of ice, or cold baths.

In all hyperpyretic cases of scarlatina, whether its form be sthenic or asthenic, accompanied by pronounced nervous symptoms, an ice-bag or its equivalent, a linen or silk handkerchief wrung out of ice-water every five or ten minutes, should be constantly applied over the head, so long as the temperature remains at or above 103°. The ice-bag should be about one-third full, so that it fits over the head like a cap. If a handkerchief be used, the popular objection to the use of cold may be in a measure overcome by adding one-fifth part of alcohol to the water, or, as Henoch recommends, adding vinegar to it. At the same time as a potent means of abstracting heat, at least when the temperature is at or over 104°, a similar application should be made around the neck, and especially along its sides. Cold applications

over the great vessels of the neck, the jugulars and carotids, promptly abstract heat from the blood, while they diminish the pharyngitis, adenitis, and cellulitis, as we have stated above. In sthenic cases, in which the extremities have a pungent heat, a bright red colour, and active circulation, the limbs should be frequently sponged with cool water containing alcohol or vinegar. If the temperature with this treatment be not sufficiently reduced, the hands and forearms may be immersed in the lotion, while the patient is still in bed, or a double thickness of muslin or linen, frequently wrung out of ice-water, may be placed upon the hands and arms. This treatment is grateful to the patient, is not attended by any shock, and, continued two or three hours, it usually reduces the temperature two or more degrees.

As regards the use of drugs in reducing high temperatures, Dr. Lewis Smith recommends two medicines. These are **Aconite** and **Phenacetin.** Neither of them should probably be given in cases of extreme malignancy, characterized by feeble pulse, dusky colour of the skin, and sluggish capillary circulation; but in hyperpyretic cases not markedly adynamic or malignant, they are safe and useful if properly employed.

In his instructive paper on the treatment of scarlatina, read before the American Pædiatric Society in 1889, Dr. Fruitnight stated that he had records of sixty-three cases of scarlet fever treated with aconite, with only three deaths. He had employed antipyrin and antifebrin in a considerable number of cases, but abandoned them on account of the symptoms of cardiac depression, and sometimes of collapse, which they caused. Dr. Fruitnight gives a table of cases, showing the reduction of temperature produced by the tincture of aconite root. The average adult dose of this medicine is about 3 minims every three hours. A child of eight years could take ⅓, and one of twelve years ½, of this dose. He has also observed a good result from phenacetin administered in ½ grain doses to a child of eighteen months, and in 1-grain doses to a child of the age of three to five years, every two or three hours, with an alcoholic stimulant. If, however, there is marked depression, phenacetin should not be prescribed, or only in very small doses.

In malignant cases, with frequent, rapid, and weak pulse, *ante-mortem* heart-clots are liable to occur, constituting a fatal complication. To prevent this, cardiac tonics and stimulants should be employed, as digitalis, musk, camphor, the carbonates, or aromatic spirits of ammonia, and the alcoholic stimulants. These agents produce stronger contraction of the cardiac muscular fibres, and thus diminish the danger of the formation of thrombi.

Dr. Henery Noble Joynt* also commends the use of antiseptics,

and advises that the throat and nares should be thoroughly syringed out every three or four hours with a strong solution of **Boric Acid** in glycerine. After irrigation, he finds painting the ulcerated structures with the thick boroglycerin, or with glycerin of iodine (1 in 7), or better with glycerin of thymol (1 in 10—50), a valuable addition. The same author gives valuable hints on the general management and dietary of scarlet fever. Confinement to bed, free ventilation of the sickroom, a constant temperature of about 60° to 65° F., milk diet, and flannel worn next the skin, are the broad principles of management during the acute stage. Free ventilation is an important point: a scarlet fever patient cannot have too much fresh air; the maintenance of a warm temperature is a secondary matter compared to it. A hot bath daily, and sponging the body over with acidulated water or a weak solution of glycerin is refreshing, and enables the skin to act. Milk diluted with barley, soda, or lime-water, or boiled, or made into whey, should form the staple diet. Pancreatized and peptonized milk is more readily digested than plain milk. Cream is valuable for children. Beef-tea often sickens and causes diarrhœa in children; as ordinarily made it is stimulating rather than nutritious, but when prepared by digesting for a few hours, in a warm place, finely minced raw meat in water acidulated with hydrochloric acid, a highly nutritious fluid is obtained. Eggs are excellent. Sipping hot water or coffee assuages thirst, and the patient should be allowed to drink as much water as he desires, provided the quantity is not excessive.

Dr. D. Allan Jamieson[3] lays great stress upon accelerating desquamation, and therefore shortening the infective period of scarlet fever. Carbolic acid in the proportion of 3 per cent., in ointment or oil, constitutes the most reliable agent. With this, however, should be combined daily ablution with soap and warm water, so as to remove as rapidly and as completely as possible the dry epidermic particles as soon as these become loose, the carbolized oil or ointment being rubbed on the surface after it is dried. A better means, however, lies in the action of resorcin. Rubbed on as an ointment, it did not produce the desired effect in scarlet fever. A resorcin soap, indeed, would have amply fulfilled the indications, but on inquiry it was found that there were chemical difficulties in the way of manufacturing such. When resorcin was incorporated with ordinary hard or soft soap a molecular change took place in the drug, its constituents broke up and formed new combinations; in fact, it was no longer a resorcin soap. But in process of time, by a simple procedure, Eichhoff succeeded in obtaining a stable resorcin soap. He found that when a soap was

made chemically acid by the addition of salicylic acid, a moderate amount of resorcin quite sufficient for our purpose could be combined with it. A 3 per cent. resorcin salicylic superfatted soap is now prepared by Beiersdorf, of Hamburg, and by Muhlens, of Cologne. When this soap is used to wash cases of scarlet fever, warm water being always employed from the commencement to the close of desquamation, a notable diminution of the period occupied by "peeling" is observed.

REFERENCES.—[1] "Pract.," Jan., 1892; [2] "Dublin Journ.," 1891; [3] "Lancet," Sept. 12, 1891.

SCIATICA. *Græme M. Hammond, M.D., New York.*

Dr. F. Gundrum[1] recommends very highly the efficacy of wet cups for this affection. He considers that rheumatism, gout, syphilis, and anæmia have very little to do as factors in the causation of sciatica. The majority of the cases are due to inflammation of the nerve-sheath, or of the nerve itself. This condition is either induced by traumatism or by cold. **Wet Cups** should be applied along the course of the nerve, particularly over the seat of the pain. As the blood begins to flow the pain usually diminishes. When one cupping does not have the desired effect, it should be repeated once or twice. The patient should be kept in bed, between blankets, and perspiration encouraged. The limb should be kept perfectly quiet, but Dr. Gundrum does not believe in the use of the straight splint.

Dr. S. Weir Mitchell,[2] on the other hand, speaks most highly of the **Long Splint** as the most certain method of securing absolute rest. If this in itself is not sufficient, daily **Cauterization** at the pain-points is recommended. If the case is still obstinate, an **Ice-bag** is kept on the painful nerve tract day and night for two or three weeks. Mitchell states that he has never seen a case of sciatica in which he was obliged to resort to nerve-stretching.

REFERENCES.—[1] "Therap. Gaz.," Feb. 15, 1892; [2] "Braith. Ret.," July to Dec., 1891.

Synopsis.—(Vol 1892, p. 450.) Eliot uses **Morphine** hypodermically, combined with **Atropine**, or of **Theine** ½ gr. dose dissolved in hot water. In acute cases he gives **Sodium Salicylate** 15 grs. every three or four hours, and **Potassium Iodide** in chronic cases. Neurotics, such as **Aconite, Belladonna** and **Gelsemium** may be of use, or **Cantharides Blisters** every forty-eight hours along the nerve.

SEPTUM (Nasal). (See also "Nose, Diseases of.")

J. Dundas Grant, M.D., F.R.C.S.

Perforations.—The difficulty in distinguishing the different varieties of septal perforation has been diminished by Hajek.[1] He refutes the antiquated idea that septal perforations are all syphilitic, pointing out

the inherent weakness of the cartilaginous part, and its consequent tendency to undergo perforative ulceration under slight traumatic irritation. He differentiates the characters of the tuberculous, syphilitic, and simple perforations in the following tabular manner :—

	Tuberculous.	Syphilitic.	Simple.
Onset.	Commences with a bilateral submucous infiltration on the cartilaginous portion of the septum. Simulates a new growth.	Commences with a bilateral submucous swelling, situated at the level of the tubercle of the septum.	Commences with repeated epistaxes produced at the level of a superficial whitish ulcer.
Evolution.	Absence of softening, but protrusion of a fungating mass of tissue through the mucous membrane, and filling the nasal fossæ	Softening starting from the centre of the infiltrated mass extending eccentrically.	The ulceration proceeds by stages and deepens progressively.
Characters.	*Borders* always formed by a thick cushion of fungating tissue. *Form* generally rounded.	*Borders* formed by thickened mucous membrane, detached from the cartilage and not granulating. *Form* very irregular.	*Borders* clean cut as if punched out. *Form* round or oval, but always regular.
Site.	Almost always confined to the lower portion of the cartilage.	Almost always involves the bony septum, and very rarely limited to the cartilage.	Always confined to the cartilage.
State of Nasal Mucous Membrane.	Rarely presents a crop of miliary granulations round the ulcer, like the lymphoid nodules occurring in scrofulous subjects.	Intense general purulent rhinitis.	Absolute integrity of surrounding mucous membrane.
Termination.	Never heals of itself.	Very slow spontaneous healing, but fairly rapid under specific treatment, in spite of which a considerable loss of substance often remains.	Always heals spontaneously.
Condition after Cicatrisation.		*Borders* thick, irregular, corded (ficelé), cicatricial. Surrounding mucous membrane irregularly sclerosed. Secondary atrophic rhinitis sometimes very pronounced. Subsequent deformity of the nose.	*Borders* thin, clean, formed of normal mucous membrane. Surrounding mucous membrane normal. Rest of the mucous membrane normal. Subsequent deformity of the nose extremely rare.

He considers that "lupus of the septum can only be diagnosed with

certainty if, at the same time, there exist on the skin of the nose the characteristic lupous tubercles."

REFERENCE.—[1] "Annales des Mal. de l'Oreille," Oct. 1892.

SNAKE BITE. *Frank J. Wethered, M.D.*

Strychnine has been strongly recommended for the treatment of snake bite, especially by Mueller, of Yacbrandandah, Victoria.

He says that the antidote should in every case be continued at short intervals of time, in fairly large doses, until its independent physiological action is unmistakably established, and its use should be promptly resumed if the symptoms of snake-bite poisoning again manifest themselves.

Calmette, from fifty-two experiments made by him with the venom of the cobra di capello on rabbits, guinea-pigs, rats, fowls, pigeons, dogs, and monkeys, considers that it is possible to cure animals suffering from the effects of snake poison by neutralizing the venom that has been absorbed by the blood, by subcutaneous injections of gold; but subsequent experiments have shown that it cannot be considered as a practical remedy. (*See* "Dict. of New Remedies," article "Gold," p. 27).

Synopsis.—(Vol. 1892, p. 455.) Ray injected ♏20 of **Strychnine** solution (gr. 1 in ♏240), repeating it twice within an hour, and continued in diminishing doses until ¾ gr. had been given in 10 hours; during the next 6 hours ½ gr. was given, and recovery followed.

SPASM (Muscular, Localized).

Synopsis.—(Vol. 1892, p. 455.) Leszynsky cured cases of spasm of neck muscles of right side, torticollis and facial spasm by **Atropine**, injecting $\frac{1}{150}$ gr., increased, if necessary, to $\frac{1}{8}$ or $\frac{1}{4}$ gr. Keene excises portions of posterior divisions of the first three cervical nerves for torticollis, and Southam removes a portion of the spinal accessory nerve in similar cases.

SPASTIC PARALYSIS. *John Ridlon, M.D., Chicago.* *Robert Jones, F.R.C.S., E.*

Dr. Charles L. Scudder,[1] on "The Operative Treatment of Spastic Paralysis," points out the well-known fact that treatment of this condition by drugs, by electricity, by braces, and by operations aimed at the cerebral lesion, have failed, and advocates division of tendons by open incision near their muscular attachments in cases where contraction is present.

REFERENCE.—[1] Scudder, "Boston Med. and Surg. Jour.," Mar. 31, 1892.

SPINA BIFIDA. *William Thorburn, B.S. (Lond.), F.R.C.S. (Eng.).*

Monod[1] reports the case of a new-born child with a large thin-walled sac; the latter was punctured, and two hundred grammes of fluid evacuated. The sac walls being then dissected down to the

orifice, skin flaps were sutured across the latter, a perfect recovery being obtained. He has collected thirty similar cases. Jalaguier[2] records a similarly successful result in the case of a cervical spina bifida. Gardner[3] reports a death following an analogous operation, the fatal result being due to profuse flow of cerebro-spinal fluid.

Périer[4] records a case in which, after opening the sac of a spina bifida, the bony gap was filled up by a plate taken from the scapula of a rabbit. The object of this osteo-plastic method is to avoid narrowing of the medullary canal by approximation of the edges of the opening. It is admitted that the implanted bone will ultimately be reabsorbed, but it provides the basis for a firm fibrous cicatrix.

Bobroff[5] has further developed the osteo-plastic method of closing the cleft of a spina bifida. Guided by the methods of Dollinger and Senenko, who cut bony flaps from the sides of the bodies of the vertebræ, and brought these together over the middle line, on the principle of the operation for cleft of the hard palate, he performed the following operation upon a boy aged eight with a sacral myelomeningocele. Having cut away by elliptical incisions a part of the sac, he replaced the nerves of the cauda equina and lower end of the cord in the vertebral canal, extirpated the remainder of the lining membrane of the sac, and then carried an incision outwards along the right crista ilei, clearing the bone and chiselling from the crest a bony strip with its attached periosteum. This piece of bone, which was left in continuity with the erector spinæ muscle so as to retain a good blood supply, was then brought over the cleft in the spine and there sutured, the bony edges of this cleft being first freshened. A perfect recovery was obtained with great improvement also in the condition of the innervation of the bladder and rectum, which had been paralyzed before the operation. In the case of spina bifida in the dorsal or upper lumbar region, it is recommended to take a similar flap from the ribs.

De Ruyter[6] analyzed twenty cases of congenital defect in the skull or spine, treated in Bergmann's Clinic during the last two years. Of these, eight were submitted to radical operation, with five deaths, and of twelve not operated upon all died. Of spina bifida he regards as suitable for operation only cases of meningocele or meningo-myelocele with few nervous elements in the sac. It is admitted that meningocele is not by any means necessarily fatal, but operation is advised, as otherwise healing often leads to pressure upon the cauda equina. In opening the sac great care must be taken to proceed gradually, so as to ascertain with certainty the nature of its contents, and leave an opportunity for reclosing should it prove an unsuitable case. In suturing the edges, close approximation is required to avoid sub-

sequent loss of cerebral-spinal fluid, three out of the five fatal cases having died from exhaustion thus induced.

Keen[7] reports three interesting cases, viz.: excision of a cerebral meningocele and of one cervical and one sacral spina bifida; the first case was cured; of the two latter both died from enteritis.

The present literature of this branch of surgery has not satisfied the writer that these operations afford a fair probability of success, and he cannot agree with Bobroff, who is inclined to relegate Morton's method to the domain of history.

REFERENCES.—[1]Monod, "Gaz. des Hôp.," Mar. 19, 1892; [2]Jalaguier, Ibid., Mar. 29, 1892; [3]Gardner, "Med. News," Mar., 1891; [4]Périer, "Semaine médicale," May 18, 1892; [5]Bobroff, "Cent. f. Chir.," June 4, 1892; [6]De Ruyter, "Circh. f. klin. Chin.," Bd. xl. p. 72; [7]Keen, "International Clinics," 1891.

SPINAL ANÆMIA (Syphilitic).

Græme M. Hammond, M.D., New York.

Dr. Orville Horwitz, in an interesting article on "Spinal Anæmia due to Syphilis," discusses the subject in a very comprehensive and thorough manner. His paper is based upon the study of six cases, in one of which he was able to secure a *post-mortem* examination. The anæmic condition appeared to be due to certain changes which had taken place in the coats of the arteries supplying the cord. Of the six cases four were women. They were all addicted to the abuse of alcoholic stimuli, and they all indulged in excessive sexual intercourse. One was an opium eater. Inflammation of the coats of arteries frequently follows as a result of syphilis, and the calibre of the blood-vessels diminishes. As a result of this condition the blood supply becomes inadequate for the nourishment of the nervous substance, which, consequently, undergoes softening. This condition is often erroneously ascribed to a syphilitic inflammation of the cord or its membranes; whereas the changes in the cord are really due to anæmia. In Dr. Horwitz's case the walls of the vessels were observed to be enormously hypertrophied, the contraction of the newly-formed connective tissue had in most cases almost, and in some cases completely, occluded the arteries. The principal changes were found in the intima, while the external coat was nodular and thickened; the elastic coat was very slightly altered. The cord itself was very soft and flat. The gray matter was of a dark colour. The pia mater looked normal to the naked eye, but under the microscope that portion of it which covered the softened areas of the cord showed evidences of inflammatory changes having taken place.

The earliest symptom observed is a loss of desire for any mental

effort. There is also confusion of ideas and insomnia, though at times the sleep is heavy and prolonged. The slightest emotional excitement produces trembling of the limbs, especially of the hands. Soon an irritating twitching of certain muscles is observed, especially marked in the thighs, back, legs, and arms, beginning in the order named. This condition is most frequently observed at night, when the patient is in a recumbent position.

Excesses of any kind increase the twitchings. Soon the patient begins to loose flesh, becomes weak, dispirited, irritable, and hysterical, and experiences alternate feelings of heat and cold. The evolution of these symptoms seems to occupy a period of from six months to a year. As the disease advances the patient is forced to remain in bed, or if he sits up for an hour or two he becomes greatly exhausted. He is pale, anæmic, and wasted, has little appetite, and the food he takes fails to nourish him. Pain, which was perhaps formerly only felt in the back and limbs, is now experienced along the subcutaneous surfaces of the more exposed bones. There is no thickening of the periosteum and no tenderness on pressure. The joints retain their normal condition, and the muscles react normally to electricity. Temperature is normal ; the heart is irritable, and the pulse usually increased to 100 beats a minute. The urine is normal, or perhaps loaded with phosphates. The wasting increases until, in the last stages, the patient is reduced to a skeleton, when death closes the scene.

In the early stage of the disease the diet plays a most important part in the treatment. From the first the patient should be placed upon a plan of forced feeding, and small quantities of **Concentrated Food** in fluid form should be given every two hours during the day, and every third hour during the night. This plan should be pursued for a period of six weeks or two months, or until the patient has gained at least ten pounds. The change then from fluid to solid food should be made gradually. Stimulation is usually indicated. From 3 to 4 ounces of **Whisky** in twenty-four hours can be advantageously administered. As convalescence supervenes the stimulation can be decreased, and should be finally abandoned.

Usually, at first, medicines do more harm than good by destroying the appetite and producing nausea. When the digestion has improved and nutrition seems to be advancing, 5 drops of the saturated solution of **Iodide of Potassium**, well diluted in water, may be given after meals. If this is well borne, the dose should be increased to 10 drops. If the iodide is not well borne, 30 drops of the **Aromatic Spirits of Ammonia** may be added to each dose. The iodides should be con-

tinued for about six months, when **Mercury,** in tonic doses, should be given for another six months. Nerve tonics, such as **Strychnine** and **Phosphorus,** are especially indicated. The former in doses of $\frac{1}{40}$ grain may be given hypodermically three times a day at first ; later it may be given by the mouth. Iron is not well borne in the early stages of the disease, but when marked improvement becomes manifest, reduced iron is exceedingly beneficial. Hypnotics may be considered as positively injurious. Massage at bedtime will usually induce good sleep.

The spine should be kept at absolute rest. To secure this a leather jacket braced with wire is to be fitted to the body and worn unintermittingly, except when the patient is bathed. The jacket should be worn from three to four months. Suspension is of benefit. It should be performed daily for about thirty seconds at first, and the time gradually extended to five minutes. This treatment should also be continued from four to five months. When there is atonic impotence, and the patient suffers from pain in the lumbar region, applications of ice by means of the spinal ice-bag give gratifying results. It should be applied from twenty minutes to an hour.

As soon as the patient is strong enough to stand the exercise, a daily walk in the fresh air should be directed. Very often patients suffer from continuous pains in the bones. The proper treatment is the careful employment of **Opium** and its compounds ; chloral and bromides should be avoided.

Reference.—"Therap. Gaz.," April 15, 1892.

SPINAL CORD (Lesions of Lower Portions).

Græme M. Hammond, M.D., New York.

Dr. M. A. Starr contributed a valuable paper on this subject in the July number of the "American Journal of Medical Science." His conclusions, briefly stated, are as follow: The centres of control of the bladder and rectum are in the two or three last segments of the cord. The position of lesions may be, to a great extent, determined by the areas of anæsthesia to which they give rise. Thus a lesion involving the conus medullaris and the fifth and fourth sacral segments produces a heart-shaped area of anæsthesia between the two buttocks, including the perineum, scrotum, posterior surface of the penis (or entire genitals in the female), and rectal mucosa. A lesion involving the fifth, fourth, and third sacral segments adds to the above area of anæsthesia by spreading over the buttocks further and downwards along the back of the thighs. This is termed the saddle-shaped area. At the level of the first and second sacral segments, the area of anæsthesia includes the popliteal space in addition to the area previously described, and is, moreover, more widespread over the back

of the thighs. A lesion at the level of the fifth lumbar segment extends the anæsthesia down the outer surface of the leg as far as the ankle or toe. Lesions affecting the third lumbar segment, anæsthetize the entire legs and thighs with the exception of a narrow funnel-shaped zone reaching down the front of the thigh, leg and foot. Destruction of all but the first lumbar segment causes complete anæsthesia of both thighs, legs, feet and genitals. When the first lumbar segment is implicated the abdominal wall becomes anæsthetic. In hysterical paraplegia the genitals are not included in the areas of anæsthesia. This enables a differential diagnosis between organic lesions and hysteria to be easily made out. Above the level of the first lumbar segment, lesions of the cord produce anæsthesia, extending around the trunk in girdle form.

REFERENCE.—1"New York Med. Journ.," July 30, 1892.

SPINAL CORD (Surgery of the).

William Thorburn, B.S. (Lond.), F.R.C.S. (Eng.).

A novel and bold procedure is advocated by Chipault,[1] who endeavoured to meet by one operation the two indications which are present in paralysis arising from caries of the spine, viz. : (1,) The relief of pressure symptoms ; (2,) The direct drainage of the bone lesion. He performs an extensive laminectomy, laying bare the dura mater for some distance. The cord, in its theca, is then gradually drawn to one side until half of the posterior surface of the vertebral bodies is exposed ; the other side is similarly dealt with. Granulations are scraped away, sequestra removed and pus carefully wiped off. Finally a drainage tube is introduced, by the side of the meninges, into the suppurating focus, the outer end being brought out at the lower angle of the wound, so as to drain the abscess cavity. The whole operation can be performed without injury to the nerve roots. Of three cases thus treated, one died of broncho-pneumonia, apparently unconnected with the operation ; the other two survived with relief of the pressure symptoms, and with no sign of meningitis.

Urban[2] has carried still further the treatment of affections of the vertebral bodies through the spinal canal. In order to remove pressure on the cord, arising from displacement backwards of these bodies, he resects several laminæ, carrying up a flap which consists of the whole of the posterior coverings of the theca, both soft and bony. The theca being then carefully carried to one side as in Chipault's operation, he chisels away the prominence on its anterior aspect. The operation was performed four times, two cases being traumatic and two tubercular ; of the former one was cured and one improved ; of the latter both died. The details of the cases given in

the original paper are very brief and do not allow of satisfactory conclusions as to their real nature.

Church and Eisendrath[3] record eight cases of spinal cord lesions, in seven of which operation was resorted to. Of these seven, two were gunshot wounds, and two severe fracture-dislocations, no benefit resulting in any of these four. One was an old fracture of the sacrum, in which, although the nerves of the cauda equina could not be found among the resulting callus, relief of symptoms followed upon excision of a large part of the bone. A sixth case was a fracture-dislocation between the tenth and eleventh dorsal vertebræ. Five hours after the accident the spinal canal was opened, a large extrathecal clot washed away, and the vertebræ reduced and held in position by a strong silk ligature passed through the adjacent spinous processes. The paralysis and hyperæsthesia previously present entirely disappeared. The remaining case was one of spindle-celled sarcoma situated within the cord, occupying its posterior third and covered over by a few white fibres. This growth was easily enucleated, but the patient died on the fifth day from suppurative meningitis. This is, we believe, the first recorded case of an attempt at excising a growth situated in the substance of the spinal cord, and the accidental death is the more to be regretted, as we are thus rendered unable to judge of the results of such an undertaking. The *post mortem* examination revealed a considerable hæmorrhage in the cord at the seat of operation.

Auffret[4] contributes an article on laminectomy, the main conclusions of which do not differ from those set forth in last year's "Medical Annual." He holds that the axis and atlas should not be submitted to this operation, a conclusion which the present writer cannot endorse, as he has recently obtained recovery after removal of the bulk of the laminæ of the axis with the third and fourth cervical vertebræ. Operation in this region is necessarily a delicate but by no means an impracticable procedure.

W. Jones[5] records a successful case of removal of a "tumour," "thought to be tubercular," extending from the fifth to the eight dorsal vertebra, and attached to the dura mater. Symptoms (complete paralysis and almost complete anæsthesia) had been present for six months, and, seven months after the operation, the patient could walk with crutches, had no anæsthesia, and was in perfect health.

I have recently[6] analyzed twenty-nine cases of injury to the spinal cord, with a view to ascertaining the condition of the reflexes, and arrived at the conclusions that, as Bastian had previously stated, the deep reflexes are lost only in total transverse lesions; that the superficial reflexes generally follow the same law, but that there

are exceptions, as previously shown by Bowlby; and that, in opposition to Bastian's view, the vesical reflex appears to disappear in total transverse lesions, and in these only.

REFERENCES.—[1]Chipault, "Rev. de Chir.," 1891, p. 579; [2]Urban, "Centralblatt f. Chirurg.," 1892, Suppt.; [3]Church and Eisendrath, "Am. Jour. Med. Sci.," April, 1892; [4]Auffret, "Sem. méd.," Feb. 10, 1892; [5]Jones, "New York Med. Rec.," March, 1892; [6]"Medical Chronicle," May, 1892.

John Ridlon, M.D., Chicago.
Robert Jones, F.R.C.S., L.

SPINE (Caries of).

Mr. Muirhead Little states that of three hundred and twenty cases treated at the National Orthopædic Hospital, one hundred and fifty-one were males, one hundred and sixty-nine females. Of these one hundred and fifteen occurred in the first five years of life, and two hundred before the end of the tenth year. He agrees that the dorsal region of the spine is most frequently attacked, and the lower oftener than the upper six. Next in frequency is the lumbar, then the cervical. Of one hundred and eighty-seven cases treated as out-patients, Mr. Little only found seven developed abscess. This is considerably less than what is usually the case. Among in-patients, presumably a more serious class, he only found twenty-one out of one hundred and thirty-three with abscess. Of these one hundred and thirty-three cases, six died from all causes. We presume these deaths occurred within hospital. The treatment recommended during the early stages is recumbency. This in the case of young children is made possible by an iron bed frame, which secures the patient. Later, extension, Phelp's box and the Fisher suspension couch, are recommended. In the later stages Mr. Little recommends the poro-plastic jacket. Abscesses are to be opened and the lumbar incision is to be preferred in cases which point in Scarpa's triangle. Of the one hundred and thirty-eight patients treated inside the hospital, only ten presented symptoms of paraplegia. Of the ten, seven recovered. Operative procedures for the relief of paraplegia are discouraged.

Pott's Disease.—Dr. R. W. Lovett,[1] on "The Diagnosis of Pott's Disease," besides the characteristic deformity due to bony destruction, adds: (1,) Stiffness of the spine in walking and in passive manipulation; (2,) Peculiarity of gait and attitudes assumed, according to the location of the disease; (3,) Lateral deviation of the spine; and (4,) High temperature. He points out the fact that pain is usually referred to the terminal parts of the spinal nerves, but that absence of pain is not to be taken as evidence of absence of disease.

Dr. John Ridlon,[2] on "Syphilitic Spondylitis in Children," admits

that in the absence of corroborative syphilitic manifestations it may be impossible to make the diagnosis conclusive without resort to anti-syphilitic medication. He regards as suspicious and worthy of careful investigation all cases appearing in very young children, and in the offspring of classes notoriously syphilitic.

Dr. T. Halstead Myers[3] divides the subject into two parts: the effects of the disease on pregnancy; and the effect of pregnancy on the disease. Twenty-four cases of labour occurring in fourteen cured cases are reported, and in no instance was there a rekindling of the old disease. In six out of seven, where active disease was present, the severity of the disease appeared to be greatly increased.

Dr. E. G. Bracket[4] concludes that in paralysis occurring in dorsal caries, recovery may be looked for even after its persistence for at least a year and a-half, and with sensation as well as motion affected; that the treatment of extension in addition to the fixation is often attended by decided improvement, and should be given a thorough trial before resorting to other means; that the improvement, although early treated, may not be apparent for several weeks or a few months; that the most careful attention should be given to the details in securing a well-adapted support to the whole back, to the continued and even extension, and to the avoidance, as far as possible, of all motion.

Dr. Albert Hoffa[5] says: When the tubercular growths in the body of a vertebra have caused a perforation of the posterior surface of the vertebral body, and a destruction of the periosteum of this surface, then the tuberculous inflammation begins to spread in the epidural space, which favours tubercular growths, because of its loose, fatty, and vascular tissues. In this way partly tubercular granulations, partly tubercular abscesses, press the dura mater upon the cord. Now reaction takes place in the dura, but a specific inflammation of this membrane does not yet occur. The process still remains a peripachymeningitis. It is only after the process has lasted for some time that the peripachymeningitis becomes pachymeningitis. But even then the process is limited for a long time to the outer layers only of the dura mater. If the patient lives long enough, the process finally passes through the dura, and then assumes a characteristic tubercular inflammation of the cord. Thus this specific tuberculous myelitis never sets in until near the end of the disease, to which the patient succumbs.

Dr. H. L. Burrell[6] concludes that efficient mechanical support of the spine is the prime factor in the treatment of caries of the spine associated with an abscess; that under an expectant plan of treat-

ment the abscess will in many cases disappear; that the indication for operative interference is a steady or rapid decline in the patient's general condition, and that the operation should consist in thorough evacuation of the abscess, and the establishment of drainage from as near the seat of disease as is practicable.

Dr. W. R. Townsend[7] analyzes three hundred and eighty consecutive cases of Pott's disease; seventy-five had abscesses. Cases that were doing well were treated by braces; in some, the abscess disappeared. Those of a size to interfere with the application of apparatus or locomotion were aspirated; those that had become infected were incised and drainage established. The results were good, despite the fact that nearly all the cases at the time of the operation, or at some subsequent dressing, became infected.

Mr. G. A. Wright[8] concludes that the first essential is rest to the spine; that an abscess should be left to itself unless increasing for at least a month. That if the abscess increases, and appears about to break, or if there is acute suppuration, it should be opened, washed out, and closed without drainage; that receding abscesses should be left alone; that residual abscesses should be opened, washed out, and closed without drainage. That if there be any doubt about the real maintenance of asepsis the abscess should be left alone, or treated by aspiration and injection of iodoform.

Dr. H. L. Taylor[9] makes a distinction between the treatment of the deformity and the treatment of the disease. All cases are treated by the antero-posterior leverage brace, and with longer or shorter periods of recumbency during the active stage. During this stage it is often possible to correct the deformity to a greater or less extent. When all the active symptoms have passed it is no longer attempted to correct the deformity, but the apparatus is to be worn for a long time to give support to the weakened spine, and serve as a protection against relapse.

Dr. A. B. Judson[10] makes the following diagnostic points: (1,) Deformity, present in Pott's disease, absent in malignant disease; (2) Local disability, and (3,) Local pain, both absent in Pott's disease, and present in malignant disease.

Three cases are reported, and to these Dr. V. P. Gibney adds one, and Mr. Howard Marsh adds another.

Dr. Samuel Ketch[11] takes seventy-five cases from the records of the New York Orthopædic Dispensary, equally divided among the three regions of the spine. The analysis shows: thirty-seven males, thirty-eight females; twenty-eight from one to five years of age; thirty-one from five to ten years of age; and sixteen above ten years of age.

The average time of treatment in obtaining a cure was: in the cervical region, $25\frac{2}{5}$ months; in the dorsal region, $64\frac{1}{2}\frac{3}{5}$ months; in the lumbar region, $47\frac{1}{2}\frac{1}{5}$ months. Abscess was most frequent in the middle and inferior areas, nearly 50 per cent. developing abscess in the course of the disease. Paraplegia was more frequently seen in the superior and middle areas, rarely in the inferior.

Dr. Bernard Bartow[12] refers again to the distortion of the spine which is so constant a symptom in the early stage of Pott's disease, and advocates its correction as more important than the immediate immobilization of the diseased area, for the following reasons: (1.) The distortion is often present in a conspicuous degree, and would remain as a permanent alteration of the trunk were attention given solely to the efforts to maintain fixation of the vertebra; (2.) When the spine is restrained, it is better that the weight should be distributed over the whole area of the affected vertebræ, rather than to rest upon a portion of it; especially is this true, when the spine is so supported, that the articular surfaces of the affected vertebræ would bear a large portion of the weight resting upon them; (3.) The removal of the distortion enables the column to have better functional qualities following the subsidence of the vertebral lesion.

Dr. Bartow makes use of a spinal jacket of perforated belting leather formed upon a corrected plaster of Paris case of the patient's body.

Dr. Royal Whitman[13] describes a modification of the ordinary Taylor back brace. Two saucer-shaped, hard rubber pads, moulded to fit, and connected by a steel band, make backward pressure against the shoulders, being placed directly in front of the head of the humerus on each side. At the back, two triangular pads of hard rubber are attached to the ends of the upper cross-piece, and hold the scapulæ against the thoracic walls.

Mr. Howard Marsh[14] reports four cases, the youngest of which was fifty-five years, and the oldest seventy-two years.

Dr. E. H. Bradford[15] concludes as follows: Pott's disease represents one of the most curable of surgical affections. Its treatment involves care for a long period—three or four years—and that treatment short of that is treatment of only a stage. During the painful stage recumbency, with complete fixation, is the best treatment. In the stage of improvement the benefit of air and exercise is essential, and efficient support is necessary. In this stage the antero-posterior steel support is efficient and reliable, if carefully fitted and well applied, and will enable the surgeon to obtain excellent results. The plaster jacket furnishes a ready and efficient means, applicable where special skill is not possible, and where nursing is imperfect.

Dr. De Forest Willard[16] draws the following conclusions: (1,) Recumbency, extension, mechanical support, suspension and support of the diseased vertebræ until thorough anchylosis has resulted, are exceedingly important preventives of and additions to operative procedures; (2,) Dormant and caseating foci may well be treated upon the expectant plan.

A. (1,) Liquifying and caseating collections should be tested with aspirator, and injected with iodoform emulsion, the operation being repeated until the tuberculous process is arrested, or until pus is discovered; (2,) If sero-purulent fluid is drawn, injections may still be relied upon to assist the system in conquering and limiting the tuberculous process; (3,) When true pus is present, the abscess should be incised, and the cavity washed out by a long continued flow of hot sublimate solution; but manipulations should not be practised upon the walls of the sac, lest a fissure be occasioned, and the entrance of tubercular poison into the system be facilitated. The incision should be carefully sutured, and from 30 to 60 grains of iodoform dissolved in boiled olive oil injected and retained in the cavity; (4,) When the situation of the abscess is in the lumbar region, and the case permits of the thorough removal of the sac, incision of the abscess, and excision of its walls with knife, scoop, and scissors, together with the removal of all tuberculous material, should be practised; (5,) When excision of the wall is impossible, free incision and drainage, coupled with iodoform injections, are palliative, and will assist in shortening the removal of the diseased tissue. Drainage tube should not be retained longer than is necessary to form a track for pus.

B. Excision of diseased bone tissue is feasible when it is situated in the arches, and occasionally in the lumbar region, when the articular and transverse process, or the side of the body, are affected. It is an operation very limited in its scope, and should be practised only in the cases mentioned. For the purpose of drainage, however, it is beneficial.

C. (1,) In the majority of cases of pressure paralysis, recovery takes place after excision and mechanical treatment; (2,) Removal of the laminæ for the relief of pressure paralysis is only to be employed after the thorough trial and failure of long continued horizontal extension and fixation, unless dissolution is rapidly threatened; (3,) Operation for the removal of the laminæ is a troublesome one, except in the upper dorsal region, and entails considerable risk to the patient; (4,) In caries of the arches, and when pressure is posterior to the cord, the operation is advisable, since opportunity is offered not only to relieve

the pressure, but also in certain cases to simultaneously remove the diseased focus; (5,) When the pressure is anterior, either from bony deposit or caseous material, or from tubercular infiltration or inflammatory deposit, no permanent benefit will be secured, even though temporary gain is apparent. The pressure is usually the result of an external pachymeningitis, yet does not necessarily indicate hopeless degeneration. The temporary benefit arises from the relief of pressure, and the clearing of the canal from tubercular masses. If thorough eradication of the material could be accomplished, the results would be more hopeful.

Dr. Benjamin Lee[17] reviews the literature, and demonstrates that he was the first to use vertical suspension in the treatment of Pott's disease in America. This was in 1865, and his paper on the subject appeared in the transactions of the American Medical Association for 1886.

Dr. A. M. Phelps[18] describes the corset devised by Dr. Waltuck, of Odessa, Russia, for use in lateral curvature and Pott's disease, and illustrates its construction.

Dr. J. M. Hawkes[19] describes a jacket made from strips of jute paper laid on with glue over a plaster case of the patient, after much the same manner as the wood corset is constructed, but instead of being split down the front for lacing, it is divided on each side into a front and back portion, and thus laced.

REFERENCES.—[1] Lovett, "Amer. Jour. Med. Sci.," Dec., 1891; [2] Ridlon, "Med. News," Oct. 17, 1891; [3] Myers, "Trans. Amer. Orth. Ass.," vol. iv., 1891; [4] Brackett, "Trans. Amer. Orth. Ass.," vol. iv., 1891; [5] Hoffa, Trans. Amer. Orth. Ass.," vol. iv., 1891; [6] Burrell, "Med. News," Dec. 12, 1891; [7] Townsend, "Med. News," Dec. 19, 1891; [8] Wright, "Med. News," Nov. 21, 1892; [9] Taylor, "Trans. Amer. Orth. Ass.," vol. iv., 1891; [10] Judson, "Trans. Amer. Orth. Ass.," vol. iv., 1891; [11] Ketch, "Trans. Amer. Orth. Ass.," vol. iv., 1891; [12] Bartow, "Trans. Amer. Orth. Ass.," vol. iv., 1891; [13] Whitman, "Trans. Amer. Orth. Ass.," vol. iv., 1891; [14] Marsh, "Trans. Amer. Orth. Ass.," vol. iv., 1891; [15] Bradford, "Trans. Amer. Orth. Ass.," vol. iv., 1891; [16] Willard, "Univ. Med. Mag.," Oct., 1891; [17] Lee, "Trans. Amer. Orth. Ass.," vol. iv., 1891; [18] Phelps, "Med. Record," Jan. 9, 1892; [19] Hawkes, "Med. News," Jan. 16, 1892.

SPLEEN (Enlarged).

Synopsis.—(Vol 1892, p 469.) Mosler used parenchymatous injections of **Carbolic Acid**, and later, **Fowler's Solution**, the latter giving good results in malarial cases. Hamond uses **Ergot**. Jager's processes include **Simple Puncture, Electro-puncture** and injections of **Sclerotic Acid**; but in one case death followed the last-mentioned procedure in a few hours

SPRUE.

Synopsis.—(Vol 1892, p 470.) Begg recommends **Santonin**, 5 grs., for adults in a teaspoonful of **Olive Oil**, repeated daily for six days, and using only the yellow crystals

STOMACH (Lavage of). *Frank J. Wethered, M.D.*

An exceedingly interesting and valuable paper on this subject by Dr. Harvey Attfield[1] has appeared, of which we give an abstract.

The idea of washing out the stomach in the treatment of chronic gastric troubles was first carried into practice by Professor Kussmaul, of Freiburg, about 1868, in which year he read a paper on the subject.

The cases which are most benefited by the use of the siphon tube may be grouped into one large class, namely, those in which from any cause the food is retained in the stomach too long a time for natural digestion to occur without abnormal fermentation. This main class may be subdivided into six lesser groups, thus: (*a*,) Where the muscular power of the stomach is insufficient to discharge its contents into the duodenum.; (*b*,) Where there is spasm of the pylorus; (*c*,) Where there is abnormal dilatation of the stomach, whether depending on organic obstruction or any other cause; (*d*,) Some cases of cancerous disease; (*e*,) Those rare cases in which the stomach is not only simply dilated, but also shows a tendency to sacculation, after the manner of the stomach of a ruminant; (*f*,) Obscure cases of obstinate vomiting and gastric pain.

Dr. Attfield describes the operation thus: "When it is decided that washing out the stomach, or 'lavage' as it has recently been termed, offers a desirable mode of treating a patient, the best method of performing the operation is the next consideration.

"Properly carried out the operation is so simple, and is productive of such relief to the patient, that he most readily submits to it, and after a little instruction is soon in a position to carry it on for himself with perfect safety and with but little inconvenience.

"The necessary apparatus consists of an elastic covered silk 'stomach tube,' of half-inch external diameter and about thirty inches in length. Slipped over the open end of this is a piece of ordinary red rubber tubing about forty inches long, attached to the extremity of which is a vulcanite funnel. After considerable experience, I find that the silk tubes for introduction into the stomach have advantages over others made of india-rubber, inasmuch as their surface is very much smoother than rubber, and they retain their smoothness for a longer time; and also because for the same external diameter and firmness they have a much larger lumen. In joining the pair of tubes by simply slipping the rubber tube over the end of the silk one, we do away with the connecting joint of glass commonly employed with the pair of rubber tubes. This, by the way, should never be employed, for the following reason. I have stated already that a vulcanite funnel should be used and not a glass one, because of

the liability of the glass funnel to fracture when warm water is poured over it, thus allowing fragments of glass to be washed into the stomach, an accident to be carefully avoided. For the same reason the connexion between the two tubes should not be of glass. If a pair of rubber tubes be used, a joint of vulcanite tubing should be employed.

"A considerable quantity of warm water should be at hand, not less than seven or eight pints if a thorough lavage be desired, and preferably soft (when this can be obtained), pure, and bright. Warm hard water is frequently so turbid from the presence of suspended chalk as to prevent us from ascertaining when the water introduced returns clear, and therefore when the stomach is completely washed. Its temperature should be about 100°F.

"The patient may sit in an ordinary chair with some suitable receptacle in front of him to hold the washings, a plain enamelled iron pail being most convenient.

"The silk stomach tube must now be lubricated. Various lubricants have been tried; sweet oil, glycerine, vaseline, milk, cream, butter, and the like. They all answer fairly well, but seem to me frequently to increase the secretion of saliva to a very disagreeable extent, and thus occasionally cause some discomfort and embarrassment to the respiration while the tube is in the œsophagus. If one can prevail on the patient to use his own saliva it is the very best lubricant, because it is the most natural, and is always at hand.

"The tube, well lubricated, and with a slight downward curve imparted to it, should be passed into the pharynx quite in the middle line. About this stage of the operation there is not unfrequently some slight contraction of the parts, preventing the further passage of the tube. This, however, is easily overcome if the patient be directed to perform the act of swallowing, when the tube readily passes into and down the œsophagus.

"About a pint or more of warm water is now introduced, and currents may even be set up in the stomach by depressing the funnel until nearly full and raising it until nearly empty, this being repeated several times. It is then lowered below the level of the patient's abdomen, and, siphon action taking place, the contents of the stomach are at once discharged. A fresh quantity of water must now be introduced into the raised funnel, and, if the patient stands it well, as much as five or six pints may be passed into and out of the stomach.

"The object is accomplished when the last washings are quite clear, showing of course that the stomach is entirely freed of all retained and fermenting food stuff."

After giving a brief outline of several cases treated in this manner, Dr. Attfield gives his conclusions, which read as follows: In all these cases the results of lavage were eminently satisfactory. These results may be summarized thus :—

(1,) In the first place vomiting is entirely checked ; in some of the cases after one washing only, and in others after two or three repetitions.

We cannot be surprised at this result, for the tube does that which Nature has been striving for and succeeded in doing in part only. Nature succeeds in emptying the stomach of most of the material which is of no use to it, nay, positively harmful, only after the patient has been so poisoned by absorption of the noxious products of abnormal fermentation as to have been brought to the vomiting point. Even then she does not eject the fermenting mucoid matter adhering to the walls of the stomach. We could no doubt help towards emptying the stomach by administering an emetic, but the nausea and pain would be the same. The stomach tube combines, in such chronic cases, the advantages of spontaneous vomiting with those of emetics, and is attended by none of the disadvantages inherent in either.

(2,) Again, by the use of the tube as soon as the early symptoms show themselves, the patient is spared the twenty-four to forty-eight hours or more of gradually increasing debility, nausea, and in some cases very severe pain, which are the forerunners of an attack of acute vomiting.

(3,) As a third result, following on the cessation of vomiting, comes a marked decrease in pain. This pain is probably the result of several causes, which are each removed by lavage : (*a*,) Probably the stomach by reflex action contracts strongly on its slimy, fermenting contents, thus producing distress ; (*b*,) There is probably a certain amount of inflammation of the mucous membrane, which will be reduced by removing the irritating stomach contents.

(4,) Increase of appetite is an invariable result of lavage.

(5,) Another remarkable advantage of lavage is the spontaneous action of the bowels which frequently follows, even in cases which have been the subjects of constant constipation.

(6,) By lavage, as already indicated, we can completely empty the stomach of its contents, which it only incompletely does for itself by the painful and depressing act of vomiting.

(7,) Finally, by emptying the stomach we put it into the best condition for recovering from its dilatation ; a dilatation which by the liability of the resulting voluminous walls and folds of the stomach to obstruct the pylorus tends always to increase. We, in fact, thus help

to break a vicious circle, in which the stomach-trouble causes debility, and debility increases the stomach-trouble. In a word, by removing hindrances to Nature's powers of cure we enable her the more easily to carry on her therapeutic work.

M. Forlanini[2] records several cases of chronic gastric catarrh which were treated successfully by washing out the stomach with a weak solution of **Nitrate of Silver.** He first introduces a 2 per cent. solution of bicarbonate of soda in sufficient quantity to come in contact with the entire gastric coat, and having evacuated this he next throws in a ½ litre, about 17 fluid ounces, of a 1 in 10000 solution of silver nitrate. He next withdraws a part of this, and injects air so as to dilate the organ and bring the whole of its mucous surface in contact with the solution. As soon as the latter is observed to become milky in appearance it is completely withdrawn and another ½ litre of a fresh solution introduced. Finally, the stomach is washed out with hot water to which is added some chloride of sodium. M. Forlanini finds that the silver nitrate stimulates the mucous membrane, gives tone to the muscular walls, and diminishes the gastric distress, a marked diminution being observed in the production of mucus. This method of treatment is especially applicable to cases of chronic catarrh with dilatation.

Dr. W. Soltau Fenwick[3] contributes an interesting paper on some of the dangers of washing out the stomach, the chief of which he considers to be convulsions and tetanus; syncope and even sudden death; perforation; haemorrhage; injury to the gastric walls through the use of a stiff tube and poisoning by antiseptic substances. Cases illustrating each of these dangers are recorded, and the paper repays perusal. In conclusion, Dr. Fenwick says: "At the present day every imaginable symptom that can in any way be connected with the digestive organs is immediately considered as an indication for the use of lavage, and we find that not only are chlorosis, atonic dyspepsia, and the gastric crisis of ataxia subjected to this treatment, but even cases of reflex vomiting are supposed by some to necessitate the employment of the douche. But it is obvious that in those cases where the treatment fails to do good, it is extremely likely to do harm, since, as Leube pointed out, it has the effect of removing those products of digestion whose manufacture has caused the stomach a considerable amount of labour. And for my own part I fail to understand how washing out the organ in a case where the normal amount of secretion proves insufficient can possibly increase its digestive powers; or the lavage of the stomach prevent the occurrence of symptoms which are wholly dependent on organic disease in

another organ remotely situated. In one case of tabes dorsalis, accompanied by exceedingly severe gastric crises, I had the stomach washed out every day for some weeks and the state of digestion carefully watched ; but beyond the fact that the symptoms of the disease grew steadily worse, I could detect no material alteration in the condition of the patient. In like manner, the few cases of atonic dyspepsia and chlorosis which I have treated by lavage, have without exception proved exceedingly rebellious and only improved when subjected to the more ordinary course of medical treatment. I would therefore conclude by saying that although lavage is an invaluable remedy in certain cases of gastric disease, its indiscriminate employment in every case of disorder of digestion will prove a curse rather than a benefit, and will eventually throw discredit upon the whole method of treatment."

REFERENCES.—[1]Attfield, "Practitioner," Feb., 1892 ; [2]Forlanini, "Lancet," Nov. 21, 1891 ; [3]Fenwick, "Practitioner," April, 1892.

STOMACH (Painful and Nervous Affections of).

Frank J. Wethered, M.D.

At a meeting of the Paris Academy of Medicine on March 22, 1892, Desnos [1] read a paper in which he recommended **Solanin** as a useful substitute for morphine in painful affections of the stomach. The drug is in a general way inferior to morphine, but it sometimes succeeds where the latter has failed, and it is likely to be of use where morphine is not well borne, or where the establishment of the morphine habit is feared. Desnos has used solanin in a large number of stomach affections—gastralgia, dyspepsia accompanied by pain, alcoholic gastritis, with or without dilatation of the stomach, etc. In a case of ulcerated gastritis with hæmatemesis, in a case of old gastric ulcer, and in one of cancer of the pylorus with vomiting, the painful symptoms quickly disappeared under the use of solanin. Desnos gives the drug in pills, hypodermic injections causing too much pain. The usual dose is 5 centigrammes given half an hour before meals ; when the pain is very acute, solanin may advantageously be given in a gummy solution. The total amount given in the twenty-four hours never exceeded 15 centigrammes.

A discussion upon the treatment of nervous affections of the stomach took place at the recent Balneological Congress in Berlin. Weissenberg [2] in introducing it, began by stating that it is essential to find out the cause of irritation. Treatment is more difficult in a generalized affection of the nervous system, whether organic or functional. Drugs are of little use, arsenic, quinine, ergot, belladonna, physostigma, and phosphorus being uncertain ; the bromides are

perhaps the best. Ewald has directed attention to two remedies, **Chloral** and **Opium.** The first is employed in hyperæsthesia of the stomach; the latter more in intestinal irritation, where it is of great service in lessening meteorism and flatulence, and causing relaxation of the tense gut, thereby allowing a motion of the bowels to take place. He, moreover, warns against the saline purgatives, because they irritate the intestine and increase the sensitiveness. These patients are wrongly sent to Carlsbad, Marienbad, and Kissingen, only to return without any benefit. Morphine cannot be done without in certain circumstances. The internal use of cocaine acts favourably, and Oser praises atropine as an efficient narcotic. Much more, however, we can hope to obtain through physical and mental improvement, residence in healthy localities, abstention from sexual intercourse, gymnastic exercise, baths, and bland diet. Boas lays great stress upon a change of climate. We possess two great and powerful factors in residence in mountainous and forest districts, and in sea bathing. Special indications cannot be laid down, and we must be content with the general rule that places with high situation are preferable for people leading sedentary lives, while sea air and sea baths are more suitable where there are pronounced disturbances of the intestinal nerves, constipation, decrease of weight, and mental depression.

REFERENCES.—[1] Desnos, "Semaine Médicale," Mar. 23, and "Brit. Med. Jour.," April 2, 1892; [2] Weissenberg, "Practitioner," June, 1892.

STOMACH (Surgery of). *A. W. Mayo Robson, F.R.C.S.*

The diagnosis of organic disease of the stomach has received not a little help from a chemical examination of the stomach contents, but although the absence of free hydrochloric acid is not positively diagnostic of cancer, it affords strong evidence of profound organic disease which is probably cancerous.

The following is the readiest method of applying the test: A test breakfast, consisting of some bread and half-a-pint or a pint of weak tea is given, and three-quarters of an hour or an hour after, the stomach contents are removed by the tube and tested for free hydrochloric acid by means of Ewald's phloroglucin and vanellin solution, which gives a bright scarlet reaction if any free hydrochloric acid is present.

The formula for this solution is :—

Phloroglucin	2 grms.	Absolute Alcohol	30 grms.
Vanellin	1 ,,		

A drop or two are placed in a porcelain capsule with a few drops of filtered stomach contents and gently heated over a lamp so that the

fluid slowly evaporates, when bright red streaks appear at the edges of the evaporated drops if free hydrochloric acid is present.

Gastroscopy is still in its infancy, but Renvers[15] recently demonstrated to the Berlin Medical Society an apparatus which consists of a small Edison's lamp fixed to the end of a bougie and covered by a small glass case filled with water. The electric current is obtained from a battery of twenty cells. If the stomach is full of food illumination is impossible, but if it is quite full of water when the lamp is passed into the stomach, an illuminated area is seen which corresponds exactly to the limits of the organ. The apparatus can only be used in the erect posture, when the greater curvature is usually seen a little below the level of the umbilicus. Abnormal dilatation of the stomach can be readily detected, and a case of carcinoma of the organ has been diagnosed by the use of this apparatus, the diagnosis being confirmed by *post-mortem* examination. The tumour appeared as a dark spot in the light field.

Gastric surgery, though recent, is not uneventful, and of the numerous operations many have proved most successful. Although extensive resection of the stomach for cancer has been disappointing, a more limited excision has been by no means unsuccessful, as shown by Defontaine's,[25] Kocher's,[17] Billroth's,[9] and my own cases[1]; but Bonanna,[6] by his experimental researches on animals, shows the possibility of going a step further, and of replacing by a plastic operation, a portion of stomach wall by a graft from the transverse colon.

The results of operation for obstructive lesions have surpassed all expectations, and constitute one of the triumphs of modern surgery.

Digital divulsion of strictured pylorus, known as Loreta's operation, although successful in a number of cases, is not only disappointing from the danger of relapse, but is in itself dangerous from laceration of the pyloric walls, or from hæmorrhage, as shown by two fatal cases reported by Mr. Swaine[19]; but fortunately the operation of pyloroplasty, devised by Heincke and Mikulicz, not only removes the mechanical obstruction, but creates a new pylorus, and as the operation is neither difficult nor dangerous, it is likely to become the usual treatment for simple stenosis. Successful cases have been reported this year by Senn,[11] Page,[21] and Lange,[22] all of whom speak favourably of the procedure.

In cancer of the pylorus, pylorectomy undoubtedly offers a chance of cure, and a possibility of considerable relief; but for the operation to be successful it must be done at quite an early stage. It would seem to me preferable not to be wedded to any special operation in

these cases, but at the time of exploration to be guided by circumstances. For instance, where the disease is very extensive, from having become fixed and from having involved glands, I should prefer gastro-enterostomy to any form of pylorectomy.

Where the disease is fairly advanced, yet not too extensive to prevent successful removal, I would suggest pylorectomy, with closure of the cut ends of the stomach and duodenum, and immediate gastro-enterostomy, as in the operation performed by Mr. Lowson and others, and improved by Prof. Kocher.[17]

Where, however, the disease is taken early, is not too extensive, has not involved glands, and has not fixed the pylorus to the contiguous parts, I should decidedly prefer simple pylorectomy, as in the cases I have reported[1]; but in order to avoid the occurrence of cicatricial constriction, I now use a decalcified bone tube, almost equal in diameter to the cut section of the duodenum, the tube being about an inch in length, with an elevated rim at each end (rather like a cotton bobbin) to prevent its displacement at too early a stage. This gives greater security at the time, and prevents after contraction. By means of the tube, and by using a continuous suture to the margins of the openings, and another continuous suture applied so as to bring the serous surfaces into apposition, one-third of an inch from the margins, the operation is shortened very considerably. The operation of gastro-enterostomy may also be expeditiously performed by means of the decalcified bone bobbin. (For illustrative diagrams, see "Intestinal Surgery," pp. 298, 299).

The following statistics of Prof. Billroth's are of much interest. The cases reported are only those for which resection of part of the stomach had been performed for chronic diseases, such as ulcerations, cicatrices, fistulæ, and tumours.

Of forty-one cases of resection of the pylorus, seven were on men, and thirty-four on women varying in age from twenty-six to fifty-eight. Twenty-eight were for carcinoma, and one for sarcoma. Of these, thirteen recovered, while sixteen were fatal. Twelve were cases of cicatricial stenosis. Of these, six recovered, and six were fatal. Of the thirteen cases which survived the operation of resection for carcinoma, five died within ten months, two after one year, one after one year and a-half, one after two and a-half years, and one after five and a-quarter years. Three women are living still. One was operated upon a year and a-half ago; she is well, although a small nodule can be felt beneath the cicatrix. The other two were operated upon respectively four and a half and two and a-half months ago. They are both well, and have gained considerably in weight. Of the six cases

which recovered from resection of the pylorus for cicatricial stenosis, four—all women—are healthy, digest their food well, and have grown stout. Of five patients in whom the pylorus kinked from very extensive adhesions, and in which these latter had to be broken down, two recovered.

Gastro-enterostomy was performed in such cases as did not permit, from the extensiveness of the disease, of resection. Thirteen men and fifteen women, ranging in age from twenty-seven to sixty-eight years, were thus operated upon—fourteen recovered, fourteen died. The duration of life of those who recovered was from one to eight months. Their conditions were much improved.

With regard to the operation of jejunostomy, my experience[1] would lead me to conclude that life can undoubtedly be prolonged by it in cases of cancer of the stomach too extensive for removal, and where food cannot be taken; but it seems to me that it ought to be clearly stated beforehand to the patient that relief only will occur, and that existence under the circumstances may not be particularly comfortable, although life may actually be prolonged for weeks, or even for months. An opening into the jejunum for feeding purposes is quite different from an opening into the stomach, and is not nearly so satisfactory, as the edges of the fistula tend to become irritated by bile and intestinal secretion, producing considerable discomfort.

Maydel[5] has proposed a modification of the operation of jejunostomy, by cutting across the jejunum, suturing the proximal end into a slit in the side of the distal portion, and then fixing the cut edges of the distal end to the skin.

Ulcer of the stomach has formed the subject of a valuable paper by Dr. Dreschfield,[2] who insists on the value of absolute rest, restriction of diet, and the administration of alkalies and bismuth. He quotes instances of recovery after perforation, but at the same time is not averse to abdominal section if it can be done early. Dr. W. W. Hall[3] reports a case of recovery after perforation without operating, and Dr. Simon and Mr. Barling report two cases where, although operation failed to relieve the general peritonitis set up by perforation, yet the exploration showed that only by this method could a chance of recovery have been given.

Cases of perforation naturally range themselves into two classes In the one there is the immediate severe collapse, with severe pain, vomiting, and the onset of a rapidly spreading severe peritonitis, these conditions being due to a free escape of stomach contents, often induced by some exertion on the part of the patient. In these cases, given a previous history of gastric ulcer, the diagnosis is not obscure,

and the indications for operation are clear. In the other class there is more difficulty in making a diagnosis of perforation. Here we have pain, sickness and faintness, with slowly extending tenderness and distension, but all these conditions are much less marked in the early stage than they are in the first group, though they may at the end of two or three days develop rapidly, and end the patient's life in a few hours. Here there is a smaller leakage which becomes more or less encysted by adhesions, and which may eventually form a well-defined abscess, perforating into the intestine, or on to the surface of the abdomen, or into the thorax; or some accidental exertion, such as that of vomiting, may rupture the collection into the general peritoneal cavity, and set up a rapidly fatal diffuse peritonitis. In this second group, ill-marked as the symptoms are as compared with those in group one, yet with a history of symptoms of gastric ulcer they would generally call for an exploratory incision.

It is almost hopeless to operate in the former class, after the peritonitis has become general, as in a case that came under my care, and which I submitted to abdominal section forty-eight hours after perforation, when I found the whole peritoneal cavity filled with pus and liquid food, which had poured in through an opening in the stomach half-an-inch across; nevertheless, even in such an advanced case, lavage and drainage gave decided relief, and prolonged life for forty-eight hours.

Drs. R. F. Weir[12] and A. R. Parsons,[4] review the subject in interesting papers, which may be profitably studied.

Of the ordinary run of cases of gastric ulcers the latest writers give a mortality of about one in twenty cases. Müller's collection of one hundred and twenty cases shows that in these hæmorrhage occurred thirty-seven times, of which fourteen were fatal The reason for this is mainly an anatomical one, the larger vessels being situated in the peritoneal coat, which being reached, not only is the accident of bleeding more disastrous, but the possibility of a final perforation is more marked. But it must be admitted that severe hæmorrhages can also occur from venous perforations, and also from comparatively small arterial branches less deeply situated. Hence one is not yet in the condition to speak strongly as to surgical measures based on the point of hæmorrhage alone, save in exceptional cases. Mikulicz, for instance, in a severe gastric hæmorrhage without tumour, did a laparotomy, opened the stomach, found a pyloric ulcer partly cicatrized, scraped this, and saved his patient.

It would almost seem incredible that cancer of the stomach may exist in a latent form, and produce death by exhaustion, without any

of its characteristic symptoms; but I saw such a case a few months ago in a gentleman of seventy. Dr. Crocq[23] and Dr. King[24] have also had a similar experience; in Dr. King's case the disease affected the cardiac end of the stomach.

Gastrorrhaphy for diminishing the size of a dilated stomach, is a new operation practised by Dr. R. F. Weir,[1] in the case of a man whose symptoms were only temporarily relieved by a gastro-enterostomy, performed some time previously. It would seem applicable to those cases of atonic dilatation which are only temporarily relieved by lavage, and where relapses are frequently repeated. The operation had been performed three times previously by Bircher with marked success.

The subject of acute dilatation of the stomach has been ably discussed by Dr. Kelynack,[12] who gives a reference to the few cases previously reported, mentioning Mr. Jessop's case which was operated on, the patient dying of shock within a few hours. Nothing was, however, found *(post-mortem)* to account for the dilatation, which was probably a neuro-paresis.

In a paper on "Gastrostomy" by Dr. Senn,[13] the following conclusions are advanced :—

(1,) Gastrostomy is indicated in all cases of cicatricial and malignant stenosis of the œsophagus and cardiac orifice of the stomach as soon as a sufficient quantity of food cannot be introduced into the stomach by simpler measures *per viam naturalis*.

(2,) Gastrostomy for malignant obstruction on the proximal side of the stomach, if performed at a time when the patient is sufficiently strong to survive the immediate effects of the operation, is a comparatively safe procedure, and adds from a few weeks to six or eight months to the patient's life.

(3,) In the treatment of impermeable cicatricial stenosis of the œsophagus gastrostomy not only furnishes a new inlet for the introduction of food into the stomach, and thus prevents death from starvation, but it often proves a curative measure in such cases, as the gastric fistula can be utilized for another purpose—successful retrograde dilatation of the stricture.

(4,) The upper central part of the left rectus and the eighth intercostal space between the cartilages of the ribs are the most desirable points for the formation of the gastric fistula.

(5,) If the patient's strength warrants it, the operation should be done *a deux temps*, as it is safer to postpone opening of the stomach until firm adhesions have been formed between stomach and the circumference of the external incision, than to establish the gastric fistula at once.

(6,) Fixation of the projecting cone of the anterior wall of the stomach in the abdominal wound is best secured by two long needles passed through the serous and muscular coats only, and suturing of the surface to the circumference of the wound.

(7,) Leakage from the fistula can be prevented most effectually by making the opening in the stomach small, by the use of an inflatable double rubber bulb through which the feeding tube reaches the stomach, or by making an oblique tunnel in the anterior wall of the stomach, as devised and practised with success by Witzel.

(8,) Solid food should first be subjected to thorough mastication and insalivation, when it is transferred by the patient from mouth to a small funnel connected with the distal end of the feeding tube, from where it is made to enter the stomach by its own weight, by blowing it through the tube or, finally, it is aspirated into the stomach by the patient's sudden expiratory efforts.

(9,) Mastication of food, as a preliminary step to its introduction into the stomach, satisfies, at least in part, the sense of hunger, which is not always accomplished even by liberal exclusive gastric feeding through the fistula.

On the same subject a series of lectures and cases, by Dr. Newman,[14] may advantageously be studied.

REFERENCES.—[1] Mayo Robson, Pylorectomy and Jejunostomy, "Trans. Roy. Med. and Chir. Soc.," 1892, and "Lancet," June 18, 1892; [2] Dreschfield, Treatment of Gastric Ulcer, "Med. Chron.," May, 1892; [3] Weir, Gastrorrhaphy for Dilated Stomach, "New York Med. Jour.," July 9, 1892; [4] Parsons, Operation in Perforation of Gastric Ulcer, "Dub. Jour. of Med. Sci.," July, 1892; [5] Maydel, New Operation for Jejunostomy, "Therap. Gaz.," July 15, 1892; [6] Bonanna, Plastic Stomach Surgery, "Ann. of Surg.," Nov., 1891; [7] Simon and Barling, Perforation of Gastric Ulcer: Operation, "Brit. Med. Jour.," Jan. 9, 1892; [8] Hall, Perforation of Gastric Ulcer, New Operation, Ibid.; [9] Billroth, Operation on Stomach, "Glasgow Med. Jour.," May, 1892; [10] Senn, Operations for Pyloric Stenosis, "Med. Press," Feb. 10, 1892; [11] Weir, Laparotomy for Perforating Ulcer, "Inter. Med. Mag.," Feb., 1892; [12] Senn, Gastrostomy, "Med. Press," Aug. 10, 1892; [13] Newman, Gastrostomy, "Lancet," Feb. 13, 1892, *et seq.*; [14] Renvers, Gastroscopy, "Brit. Med. Jour.," May 14, 1892; [15] Ewald, Functions of Stomach after Gastrostomy, "Lancet," Sept. 24, 1892; [16] Kocher, New Method of Resection of Stomach, "Ann. of Surg.," June, 1892; [17] Kelynack, Acute Dilatation of Stomach, "Med. Chron.," May, 1892; [18] Swain, Two Fatal Cases of Loreta's Operation, "Lancet," Jan. 9, 1892; [19] Renton, Gastro-enterostomy, with subsequent Disappearance of Tumour, "Brit. Med. Jour.," Jan. 9, 1892; [20] Simont and Page, Pyloroplasty, "Lancet," July 9, 1892; [21] Lange, Pyloroplasty, "Ann. of Surg.," Sept.,

1892 ; [23]Crocq, Latent Cancer of Stomach, "Med. Chron.," Apl., 1892 ; [24]King, Cancer of Cardiac end of Stomach, Ibid. ; [25]Defontaine, Excision of Cancer of Stomach, "Brit. Med. Jour.," Sept. 24, 1892; [26]Manteuffel, Wound of Gastric Artery, Ibid., May 7, 1892.

STRANGURY. (See "Bladder.")

STRYCHNINE POISONING.

Synopsis.—(Vol. 1892, p. 476.) Martinez injected Chloroform, ℥ 15, and Washed out the Stomach.

SYMPHYSOTOMY. *Wm. J. Smyly, M.D., F.R.C.P.*

Prof. Leopold, of Dresden, and Dr. Robert Müllerheim, of Strasbourg, advocate this operation in cases of relative pelvic narrowing in preference to Cæsarean section or perforation of the living child. Prof. Leopold was induced to try this method by the brilliant results obtained by Morisani in Naples, and Pinard in Paris ; the former has performed the operation twenty-two times, and the latter three without the loss of a mother or child. Prof. Leopold considers this operation much safer than Cæsarean section ; though in his own hands the mortality from the latter has only been 5 per cent., yet he would now limit its performance to cases in which the conjugate diameter of the brim is less than 6 cm. The patient is placed at the edge of a table, two assistants hold the legs below the knees, and with the other hand press the trochanters firmly inwards. An incision is made from the upper margin of the symphysis pubis to within 1 cm. of the clitoris ; the tissues are divided down to the bone. The recti are divided transversely so as to admit the index finger which is passed down behind the symphysis to the lig. arcuatum. The symphysis is then divided by a probe pointed and curved bistoury. It can now be separated about 7 cm. and the child either extracted with forceps, or left to the expulsive power of the uterus. The symphysis is then united by wire sutures, and the rest of the wound in the ordinary way. A strong pelvic girdle is worn for three weeks. It is not necessary to divide the sub-pubic ligament, nor in every case the entire symphysis.

Reference.—"Centralbl. für Gynækologie," 1892.

SYPHILIS. *F. S. Eve, F.R.C.S.*

The important question of the duration of mercurial treatment has been discussed by Kaposi.[1] He says : "As a general rule I would advise that the first or primary treatment be carefully and long enough conducted, repeating this as often as the syphilitic phenomena exhibit themselves in the skin, mucous membranes, lymphatics, etc., but ceasing immediately after they have disappeared, as all such treatment for syphilis is both superfluous and injurious. In a perfectly healthy

subject with nothing but the syphilitic virus to combat, a short rational treatment can do little harm. I have no objections to raise against an opportune repetition of this treatment within the year, if the phenomena should justify such a course.

"Concerning the form and preparation of the drug itself, I have always been in favour of inunction, and am still convinced of its efficacy, but where this fails, which I have never found it to do, subcutaneous injections appear to be equally efficacious and enduring, and with this object preparations of **Sublimate** itself, **Mercurial Peptones, Calomel, Oleum-cinereum** have been provided, but the latter two preparations being insoluble, dangerous symptoms have frequently manifested themselves."

Ehrmann[2], says that the efficiency of **Mercurial Inunction** depends among other things on the number of the follicles in the skin, and no greater effect is obtained by rubbing in a larger quantity of the ointment, unless over a greater extent of skin surface. Mercurial injections in exact dosage, have the advantage of not depending on the patient for being carried out. The disadvantages in using soluble mercurial salts for injection are that they pass through the body rapidly, and that they produce toxic effects more easily. The remains of the syphilitic poison are still present, and it may multiply so as to give rise to relapses. With inunction as well as with the injection of insoluble preparations a depôt of mercury is left which is gradually absorbed. According to Lichtenstein, relapses are more frequent after the injection of partially soluble preparations, such as the salicylate of mercury, than after the more insoluble, such as the oleum cinereum. With the latter the injection is made weekly, whereas with soluble preparations it must be made daily, and thus one advantage over inunction is lost.

The author mentions two years as the limit of duration of treatment, but if after two years a relapse occurs (a rare event in the author's experience) or marriage be thought of, an extra year must be thrown in.

Neumann[3] recommends **Asparagin Mercury** used as a subcutaneous injection once a day, the dose being 1 cm. It is prepared as follows :—10 gr. of asparagin are dissolved in warm water and oxide of mercury added until no more dissolves. The solution is filtered when cold, and the amount of mercury is then estimated. It is then diluted to the required strength of 1 or 2 per cent. The especial advantage of this drug is that it gets quickly into the circulation, that it rapidly influences the syphilitic processes, and that it is speedily eliminated.

The use of subcutaneous injections of **Mercurial Salts** in infantile

syphilis is also favourably reported on. Corrosive sublimate, in doses of 1 to 2 milligrammes dissolved in water, and *huile grise* are stated to have given the best results. This is composed of :—

℞	Mercury	3	Olive Oil	4
	Lanolin	3		

Preferable formula :—

℞	Mercury	39	Vaseline Oil	59
	Mercurial Ointment	2		

Dose, 1 to 2 grains daily.

S. Lustgarten[1] strongly advocates the use of the **Tannate of Mercury.** The first treatment ought always to be a course of thirty or forty inunctions. The subsequent treatment consists in the administration for one month at a time, of 3 to 5 grains daily of tannate of mercury, with increasing intervals of from one to three months.

The formula which he has generally used with adults is the following :—

℞ Hydrarg. Tannic Oxydulat. gr. jss. | Acid Tannic., Sacch Lactis āā gr. ¾
M. F. in pulv. sive in capsul. gelatin.
Sig.—1 twice or three times a day.

In the treatment of syphilides and ulcers of mucous membranes, Dr. E. Feibes[5], recommends **Chromic Acid** in stronger solutions than usually employed, *i.e.*, 1 part of acid to 2 of water. The application is but slightly painful, though the taste is objectionable. The treatment was equally satisfactory for mucous patches, chronic superficial glossitis, and ulcers of the tongue. When warty irregularities were present, they were first scraped with the sharp spoon, and when the bleeding had ceased, touched with chromic acid.

The writer has found bicyanide of mercury, gr. xv., aqua ℥j, to be the best application for mucous patches and recent superficial ulcers.

REFERENCES.—1"Med. Press and Circ.," June 15, 1892 ; 2"Centrabl. f. die gie Ther.," Dec. 1891 ; 3"Brit. Med. Journ.," March 26, 1892 ; 4"New York Med. Journ.," March 15, 1892 ; 5"Pract.," Feb. 1892.

Synopsis.—(Vol. 1892, p. 478.) Hutchinson gives **Hydrarg. c. Cret.** gr. j, in pill, with a little **Dover's Powder**, prohibiting all green vegetables, stimulants and smoking; if **Mercury** causes neuralgia and debility, **Quinine** and **Iron** are added. In using **Iodide of Potassium**, its combination with the **Iodides of Sodium** and **Ammonium** are useful, and the addition of **Aromatic Spirit of Ammonia** lessens the depressing influence of the drug. The new preparations of Mercury used subcutaneously are : The **Succinimide** ⅓ gr. daily, the **Oxybenzoate**, the **Alaninate** and the **Formamide.** Inunction of **Lanoline** and **Ung. Hydrargyri** in equal parts is useful in infantile syphilis, and Wiederhofer uses **Red Oxide of Mercury** 1 part to **Lanoline** 100 in the same way. When the child is several months old, **Mercury** and **Potassium Iodide** are given by mouth. **Aristol** is healing and unirritating, but of feeble antiseptic powers. **Ephedra Vulgaris Decoction** has a popular reputation in syphilitic affections in Russia (p. 38).

TÆNIA. *Henry Dwight Chapin, M.D., New York.*

The following treatment has proved successful in the hands of some French physicians, who advise the avoidance of salted foods while the prescription is being used, for fear of mercurial poisoning:—

℞ Ess. Oil of Felix Mas.	0·50 to 0·80	Water	
Calomel	0·20 to 0·40	Powdered Sugar	āā 10 grms.
		Gelatine	q s.

M. Sig.—All to be taken in 3 or 4 doses in the morning, before food, and after using milk diet the day before.

Laborde finds that the new salts of **Strontium** kill worms. He gives the medicine as follows:—

℞ Strontium Lactate	20 grms.	Glycerine	q s.
Aqua Destill.	120 ,,		

M. Sig.—2 tablespoonfuls a day, in the morning, for five days.

REFERENCE.—"Jour. de Méd.," Paris, 1892, iv., 181.

TALIPES. *John Ridlon, M.D., Chicago.* *Robert Jones, F.R.C.S., E.*

The Radical Cure of Flat-foot.—Dr. Royal Whitman believes that the breaking down of the arch is not the result of intrinsic weakness of muscles, or primary relaxation of ligaments, or congenital deformities of bone, or some peculiar disease of cartilage, or primary muscular paralysis, atrophy, or spasm, or the wearing of high heels, according to the various theories advanced by writers on the subject: but because the feet, originally sufficiently strong, have been placed at a serious disadvantage in the performance of their functions. The treatment consists in: (1,) Forcible reduction and over-correction of the deformity; (2,) Temporary support to prevent relapse; (3,) A proper shoe; (4,) Manipulations to stretch the contracted and shortened tissues; (5,) Exercise to strengthen the weakened muscles; and (6,) Re-education of the patient in the proper manner of walking and supporting weights.

REFERENCE.—"New York Med. Jour.," Feb. 27, 1892.

TAPE WORM. *Frank J. Wethered, M.D.*

The time-honoured treatment of tænia by the oil of male fern, has recently been put aside by some writers in favour of other drugs. Thus, Dr. Mirowicz,[1] writing in the "Russkaya Meditsina," recommends **Naphthalin** as an anthelmintic, and points out that all other anthelmintics contain an uncertain percentage of the active ethereal oils, and are consequently not to be depended on for their chief effect. They also incidentally disturb the digestion by the necessity of taking large doses, and some remedies—as, for instance, santonin—may in such large doses have a general toxic effect. Dr. Mirowicz, who

believes he is the first to use naphthalin as an anthelmintic, claims for it, not merely that from its very character it excludes the possibility of all untoward symptoms, but that it is also perfectly reliable in its anthelmintic properties. He has administered it against all kinds of intestinal worms, and invariably obtained prompt results. Thread-worms and tapeworms, the latter in their entirety, were removed by a single dose of 1 gramme of naphthalin. Adults are ordered a dose of castor oil afterwards, but for children it is best to give both the naphthalin and the oil together. Though, of course, naphthalin has not come into common use as an anthelmintic, Dr. Mirowicz is mistaken in thinking that he is the first to employ it in that way, as it is now some years since another Russian practitioner, Dr. Coriander, of Samarcand, published the fact of its value both in tænia and ascarides. He gave 2 or 3 grains twice a day to young children. For adults the dose was from 8 to 20 grains, mixed with sugar.

Crequy[2] recommends the following capsules for the treatment of tape worm :—

℞ Oleoresin of Male Fern ʒij | Calomel gr. v

This is to be divided into sixteen capsules. Early in the morning 1 of these capsules is to be taken every five minutes with a tablespoonful of sweetened water.

As a general rule the tape worm is swept out a few minutes after the ingestion of the last capsule. In some cases where the removal of the worm is tedious, it is customary to give to the patient two hours after the last capsule has been taken a large dose of spirits of chloroform or Hoffman's anodyne, and if the worm is not now passed it may be necessary to administer to the patient a full dose of castor oil in black coffee.

REFERENCES.—[1] "Lancet," Dec. 19, 1891 ; [2] "Therap. Gaz.," March 15, 1892.

TETANUS. *Græme M. Hammond, M.D., New York.*

Dr. A. Radcliffe[1] reports a case of traumatic tetanus cured by enormous doses of **Chloral** and fresh fluid extract of **Calabar Bean.**

The patient, who was ten years of age, developed well-marked tetanus a few days after being injured by running a splinter of wood into the top of his foot. Chloral in doses of from 7 to 9 grains was given almost every two hours for a period of nearly five weeks. The fluid extract of Calabar bean was given in doses of from 4 to 7 drops, but not as regularly as the chloral, but for the same period of five weeks. Both remedies were given in milk. The improvement was gradual but progressive from the first, and terminated in complete recovery.

Pacini[2] reports a case of traumatic tetanus cured by the tetanus

Antitoxin of Tizzoni and Cattani. Finotti [3] and Taruffi [4] both report similar cases. Pacini's case was a man twenty-one years of age, in whom tetanus developed following a wound on the finger. He was at first treated with chloral in 30 grain doses until from 90 to 140 grains had been administered in twenty-four hours; but as the symptoms became more severe, the chloral was discontinued, and 25 centigrammes of antitoxin, obtained from the blood serum of a dog which had been artificially rendered refractory to tetanic infection, were injected hypodermically at 10 a.m. and at 4 p.m. That same evening improvement was observed. The injections were repeated twice daily for three days longer and were then discontinued. From the first the number of tetanic paroxysms rapidly decreased, and the patient ultimately recovered completely.

Finotti's case was a boy eleven years old; 15 centigrammes of the immune blood serum of the dog were injected at first. Afterwards 20 centigrammes were injected. The boy made a rapid recovery.

Taruffi's patient was seventy-four years old; 25 centigrammes of the immune serum were injected daily, and sometimes twice daily. In eleven days the patient's recovery was complete.

Hypodermic injections of **Carbolic Acid** were used successfully in a case reported by Strazzeri and Titoni.[5] The patient was nine years old. A 2 per cent. solution of carbolic acid was injected every six hours. Improvement was observed after the first few injections, and steadily progressed until, in four weeks, he was discharged cured.

REFERENCES.—[1] "Therap. Gaz.," Nov. 16, 1891; [2] "Brit. Med. Journ.," Jan. 23, 1892; [3] Ibid., Feb. 6, 1892; [4] Ibid., May 7, 1892; [5] Ibid., Jan. 2, 1892.

Synopsis.—(Vol. 1892, p. 482.) Bertini reports a traumatic case cured by injections of **Carbolic Acid**, using 49 injections of a 2 per cent. solution in fifty days. Pirroni got some improvement in symptoms by injecting 6 to 10 Pravaz syringefuls of 1 in 20 **Carbolic Solution** daily, also giving the drug internally. **Acetanilide** 25 to 40 c.grams. every three or four hours, and alternated every two days with the Carbolic Acid, gave very marked benefit and completed the cure. Kitasato injected **Blood-serum** of a tetanus-immune rabbit, $\frac{1}{10}$ cubic centimètre for a dose, in an infant nine days old, and five more injections were used in the three days following without success. Maylard pushed **Chloral Hydrate**, giving 1¾ ozs. of Chloral in three days, followed by recovery. Sormant considers **Iodoform** the most powerful antiseptic for tetanus. Read used **Gelsemium Fluid Extract**, 40 drops every two hours, till spasm subsided, and then 20 drops every two hours (p. 46).

TIC (Convulsive). *Græme M. Hammond, M.D., New York.*

Tic convulsive, according to Dr. G. M. Hammond[1], is the term which should be applied to a class of cases characterized by a sudden spasmodic contraction of one or more muscles, and which is followed

by a distinct interval of rest before the spāsm is repeated. To this condition the terms "habit spasm" and "habit chorea" had been given, but the author considered that "convulsive tic" was a much more fitting and appropriate title. Convulsive tic, like chorea and other forms of mobile spasm, is the outward manifestation of irritation of cerebral motor or co-ordinating nerve cells, and investigation seemed to show that these diseases were particularly liable to follow irritation of the cells of the motor cortex, the thalami, the striata, and the cell area of the pons.

In speaking of the treatment of this affection the writer referred particularly to the efficacy of **Atropine** and **Conium**, particularly the latter, and reported three cases, and referred to several others which he had previously reported, which had been benefited by the same remedies. The action of both of these drugs was augmented by small doses of **Bromide of Sodium**. The atropine was administered in solution of a strength of 1 grain of atropine to 1 ounce of water. Of this 5 drops were given three times a day, and the dose was gradually increased until 11 or 12 drops were taken three times a day. If mydriasis was produced the dose was held in abeyance until this symptom disappeared. With each dose of the atropine were given 10 grains of bromide of sodium. Under this plan of treatment three cases of convulsive tic were referred to, which entirely recovered.

The fluid extract of conium was particularly praised for its beneficial influence in these cases. An initial dose of from 5 to 7 drops was given three times a day. The dose was increased to 1 drop daily until from 25 to 35 drops were taken three times a day; 10 grain doses of bromide of sodium were also given with each dose of conium. Several cases were reported, in two of which the spasms were limited to the inspiratory muscles. In one of these the disease had lasted several years. All of the cases promptly yielded to the gradually increasing doses of conium. The author spoke of the futility of treating these cases with arsenic. Two or three of his cases had been treated with large doses of arsenic before they came under his observation. He had also used arsenic in several cases himself, but in not a single instance had this drug shown any influence in mitigating the symptoms of the disease. The writer considered that both atropine and conium exerted a sedative action upon the irritable nerve cells, and, therefore, did not control the spasms by any local effect upon the muscles.

Dr. C. L. Dana recommends 4 or 5 grains of **Oxide of Zinc** in 1 drachm of the officinal solution of **Potassa** in certain forms of convulsive tic. He had known this to produce a very powerful sedation

in some very obstinate cases. The mixture is given largely diluted with water, three times a day. Unfortunately, the stomach will not tolerate its use for a great length of time.

REFERENCE.—"The Post Graduate," New York, May, 1892.

TINEA FAVOSA. *T. Colcott Fox, M.B.*

After nearly fifty years had passed since the recognition by Schoenlein of the parasitic nature of favus, cultivation experiments have led several observers to raise the question of the plurality of organisms producing what is clinically known as favus. Quincke, for instance, concluded that there were three forms of organism, and Elsenberg two varieties of one form, neither of which corresponded perfectly with any of Quincke's forms. Frank and Unna have cultivated three species in the latter's laboratory; and Unna has lately made a further contribution to this interesting subject. After a considerable amount of experimental work, he concludes that there are certainly three species of favus (if not more) which form typical scutula in man and in animals, and two of these have been found in ordinary wild mice. For the details of this work reference must be made to Unna's paper; but we may state here that he bases his conclusions on his pure cultivations made from men and mice, and on the results of the inoculation of these cultivations, such as the symptoms to which each inoculation gave rise under similar conditions, and the histological structure of the lesions. Unna's favourite cultivation medium is composed of agar, 4 per cent.; peptone, 1 per cent.; lævulose, 5 per cent.; sodium chloride, ½ per cent. Its preparation, owing to the large amount of agar, requires the use of Unna's steam filter, and a second filtration is necessary to ensure complete sterilization. He insists that it is necessary to inoculate the cultivated favus fungi close together, and compare the results. He no longer uses the glass-plate method, but says it is of prime importance to use only dry media in making pure favus cultures, for the various kinds of cocci and bacilli which interfere with the pure cultures require for their growth a not inconsiderable amount of water, and soon cease to thrive when the medium is very dry. Unna believes that mice chiefly infect one another while feeding, owing to the fact that the dead favus victims are devoured by their companions.

Plant obtained pure cultures on peptonized meat, peptonized and glycerinized gelatine, potato, hard egg, and blood serum, and comes to the same conclusions as Kral. Mibelli believes that the different species of fungus made by Quincke, Kral, and Frank, are not demonstrative, and that favus vulgaris and favus herpeticus, are not due to the different fungi, and in this conclusion Pick agrees. The

medical examination of the conscripts affords a means of estimating the prevalence of favus in France as a whole, and in its several departments. Feulard shows that favus is diminishing.

REFERENCES.—Feulard, Intern. Cong. Derm. and Syph., 1892; Petrouand and Courmont, "Prov. Méd.," May 21 and 28, 1892; Dubreuilh and Sabrazès, "Ann. de Derm.," 1892; Unna, "Fortsch. der Méd.," 1892, and "Brit. Jour. Dermat.," May, 1892; Mibelle, "La Riforma Med.," 1891, Mar. and Apl. and x14e. Cong. Assoc. Ital. Med., Milan, Sept., 1891; Plant, "Centralb. f. Bakt.," xi., p. 357, 1892; Pick, "Archiv. f. Derm. u. Syph.," xxiii., i.

TINEA IMBRICATA. *T. Colcott Fox, M.B.*

Tinea Imbricata, so called from the imbricated arrangement of the scales, is to be regarded, according to Patrick Manson, as a separate and distinct disease, and not simply as tinea trichophytina modified by climate. The first impression conveyed by a case is that of a free desquamation without any signs of inflammation or scratching. Closer examination discloses an arrangement of scales as if the disease had advanced in parallel and concentric lines from a great many different centres, each line of scales, one quarter to half an inch apart, being roughly parallel to the one in front and the one behind it. Where the various systems meet this appearance is destroyed. The peculiar, tissue-paper scales are perhaps half-an-inch long by rather more than one-eighth of an inch broad, with the peripheral border firmly attached, and the central one free. The skin beneath the scales is paler than the general surface, whilst just at the attachment of the scales it is rather darker, owing to the colour of the fungus. The scales contain very abundant strings of conidial and mycelial filaments containing brown pigment granules, somewhat resembling trichophyton. This fungus is situated just beneath the epidermis. Comparing it with the trichophyton, Manson thinks there is a difference in the average dimensions of the fungi, that the conidia are differently shaped, and somewhat differently arranged; but the great variety seen in both fungi make these points open to discussion. As a result of inoculation experiments, Manson was enabled to trace development of the disease and the formation of its successive concentric circles. This affection is indigenous to the Malay Archipelago, while it has spread east and south to many of the islands of the Pacific, and also northwards into China. A warm, damp, equable climate seems necessary for its rapid development and spread. The fungus is easily attacked and killed by almost any epiphyticide. Liniodi is effective, painted on bit by bit. All clothes and coverings should be burned or boiled during treatment, or relapse will occur.

Manson gives the following points of distinction from trichophyton disease: —

T. Trichophytina.	*T. Imbricata.*
(1.) Even when occupying a considerable surface, it seldom if ever affects the entire body or even an entire limb.	(1.) If the disease has existed for any length of time it occupies a very large area, generally a great part of the trunk, and much of some or all of the limbs.
(2.) Tends to affect the hairy part of the surface.	(2.) Rather avoids the hairy parts. If the scalp is involved (rarely) the hair is in no way affected.
(3.) The active part is marked by inflammatory swelling of the derma; redness, and often vesication and much itching,	(3.) Rarely any sign of even superficial inflammation.
(4.) The ring produce is usually single, or perhaps only enclosing one or two little points of infection, owing apparently to the exhaustion of some element on which the fungus feeds.	(4.) Concentric multiple rings, a fresh one starting within the old as soon as the epidermis is reproduced.
(5.) Any scaling consists, as a rule, of dried inflammatory exudation or minute branny particles of epithelium.	(5.) Scales always present, abundant, large, often an inch long by a quarter to half-inch broad.
(6.) Fungus often hard to find, and seldom very abundant.	(6.) Easily found and in great profusion, lying in layer upon layer of interwoven spores, and mycelium.
(7.) Inoculation with the fungus produces T. circinata.	(7.) Inoculation with the fungus produces T imbricata.
(8.) World-wide in distribution.	(8.) Confined as yet to a limited area.

REFERENCE.—Manson, "Brit. Jour. Dermat.," 1892.

TINEA TRICHOPHYTINA. *T. Colcott Fox, M.B.*

Duhring relates his experience of the results of treatment in forty-eight cases of ringworm in a public institution. Of all the remedies used **Sulphur** and **Chrysarobin** were the most reliable. Sulphur ointment (℥ij—iij to ℥j) was useful in scurfy conditions; but chrysarobin he considers the "most potent remedy at our command." The strength of the chrysarobin ointment in use varied from gr. xv to ℥ij to the ℥j of base, ℥j to ℥j of base being the usual prescription. If the irritant results be carefully watched, and face be protected, and small quantities be used, there is not much inconvenience. Kerion was treated with lotions containing **Sulphurous Acid** or **Hyposulphite of Sodium**. To be effectual remedies must be in constant contact with the diseased parts, and hence discutients such as carbolic acid, strong tincture of iodine, Coster's paste fail. Corrosive sublimate was not used over extensive surfaces,

and other mercurials were not effective. An application of 1 part of **Croton Oil** with 3 parts of **Olive Oil** was used to certain sluggish patches without ill effects.

Illingworth insists on the value of his **Biniodide Solution.**

Von Sehlen says chrysarobin has no effect on the vitality of cultures, though salicylic acid and ichthyol have.

Eddowes thinks Unna's chrysarobin treatment good in private, but in out-patient practice he carries out the following treatment: The scalp is washed every two or three days with soft soap or soda and water, and dressed daily with a mild sulphur ointment. For as many weeks as are necessary afterwards the scalp is systematically treated by a compound chrysarobin ointment and the sulphur ointment, according to a plan described in detail.

Abraham recommends the following, rubbed in with a stiff brush twice daily :—

℞ Acidi Carbolici	℥ss-℥j	Ung. ad.		℥j
Acidi Salicylici	℥ss-℥j		M.	

In certain obstinate cases additional applications have been made of carbolized liniment of **Iodine**, or **Mercuric Chloride** or **Iodide** (1—2 grains to ℥j) added to the ointment.

Hallopeau is credited with the following method: Use black soap every morning to the scalp, then rub in camphorated alcohol 125 grammes, essence of turpentine 25 grammes, liquid ammonia 5 grammes; half-an-hour later apply iodized vaseline, and again at night. The head to be covered with an india-rubber cap.

Sohet suggests, in order to get a strong preparation, that iodine should be dissolved in the least possible quantity of ether and added to lanoline.

Butte suggests a method of epilation by painting on for about a fortnight successive layers of the following: Iodized collodion, and then tearing the mass off and applying a parasiticide :—

℞ Alcohol (95°)	grammes 12	Metallic Iodine	gr. 0·75

Dissolve and add—

Collodion	gr. 35	Castor Oil	gr. 2
Venice Turpentine	gr. 1·50		

Arnozan, Dubrueith, and Djelaleddin-Mouktar call attention to the diagnosis of ringworm of the palms and soles.

Furthmann and Neebe conclude that there are four species of trichophyton.

REFERENCES.—Duhring, "American Jour. Med. Sci.," Feb., 1892; Kerley, "New York Med. Jour.," Oct. 10, 1891; Eddowes, "Brit. Med. Assc.," 1892; Abraham, Ibid., 1892; Illingworth, "Brit. Med.

Jour.," 1892, vol. i. ; Hallopeau, "Union Méd.," 1892 ; Butte, "Bull. de la Policlinique de Paris," 1892 ; Furthmann and Neebe, "Monatsh. f. praxt. Derm.," xiii., ii. ; Djelaleddin-Mouktar, "Ann. de Derm,," 1892 ; Arnozan and Dubrueilh, "Arch. Clin. de Bourdeaux," 1892, No. 1 and 2.

Synopsis.—(Vol. 1892, p. 486.) Ciarrocchi employs **Electric Cataphoresis**, using 1% **Sublimate Solution** in connection with the anode. Marianelli finds Unna's method very unsatisfactory. Bertarelli uses **Pitch Plaster**: ℞ Burgundy Pitch 30 parts, Black Pitch 8 parts, Venetian Turpentine 2 parts, Lard 1 part, spread on small linen strips, and applied after removing scales by grease and lead plaster. The strips are removed in a day or two, and epilation with forceps practised ; the scalp is then washed with soap, or bathed in **Bichloride** or **Lugol's Solution**, and the plaster reapplied. For those who cannot be in hospital, Besnier advises keeping hair cut close ; epilating a zone all round diseased patches ; smearing the patches with **Vaseline**, and **Curetting** or **Scraping** out all diseased hairs gently at first, then forcibly on a second occasion, after washing with **Chloroformed Boricated Alcohol**, and then apply the same lotion, but with a little cotton ball impregnated with **Van Swieten's Liquor** acidified by **Acetic Acid**. Finally cover the head with the **Acetic Vigo's Plaster**, and repeat this daily.

TINEA VERSICOLOR (Chromophytosis). *T. Colcott Fox, M.B.*

Patrick Manson says that in Chinese whose skins have been darkened by much exposure, and in dark-coloured negro races, the spots of pityriasis versicolor may appear lighter than the surrounding healthy skin, the fawn colour which evidently resides in the fungus concealing the subjacent skin pigment. Lutz remarks that in the Japanese and other darker races this affection produces white, or when the spore formation is abundant, greyish patches, and *these particles may remain months after the parasite has disappeared by treatment.*

The following ointment is recommended by Hartzell :—

℞	Acidi Salicylici	gr. xv	Lanolin, Vaselin	āā ℥iijss
	Sulphuris præcip.	℥j	M, ft. Ung.	

G. H. Fox holds that to effect a cure it is sufficient to remove the superficial layer of epidermic cells, either by mechanical or chemical agents. For this purpose frictions with **Green Soap** in a hot bath may be made daily, and night and morning the application of a saturated solution of **Hyposulphite of Soda** in rose water, with an equal quantity of eau de Cologne. If a speedier cure be desired, the green soap may be left on so that it sets up some inflammation and desquamation. This inflammation must be regulated about the breasts. The addition of precipitated sulphur and pumice stone, of each 10 per cent., still further increases the efficacy of this application. To prevent relapses, the treatment must be kept up for some time.

Molènes and Costilhes regard it as a secondary trouble appearing in dyspeptics (gastric and intestinal), and therefore in addition to

destroying the fungus by **Tinct. Iodi, Resorcin Lotion,** or **Oleate of Copper,** they seek to act on the gastro-intestinal tract with purgatives and naphthol.

REFERENCES.—Patrick Manson, "Brit. Jour. Demat," Jan. 1892, p. 8; Lutz, "Monats. f. prakt. Derm.," Feb. 15, 1892; Fox, "Internat. Med. Mag.," vol. i., No. 3, April, 1892; Molènes and Costilhes, "Arch. de Méd.," Oct, 1891.

Synopsis.—(Vol. 1892, p. 487.) **Tinctura Iodi** may be rubbed into small patches. Tilbury Fox advises scrubbing the skin, macerated in a warm bath with soap, and after drying, apply first dilute **Acetic Acid** or **Vinegar**; and secondly, **Lot. Sodii Hyposulphitis** (1 in 8). Besnier recommends thorough washing in warm water each morning, and at night friction with ℞ Resorcin, Salicylic Acid āā 15 to 45 grs., Precipitated Sulphur 75 to 225 grs., Lanolin, Vaselin, Lard āā to 375 grs. McCall Anderson suggests friction night and morning with ℞ Perchloride of Mercury 20 grs., Green Soap ℥iij, Rectified Spirit ℥ij, Oil of Lavender 20 grs. The parasiticides for ordinary ringworm are also effectual.

TOE-NAIL (In-grown). *F. S. Eve, F.R.C.S*

Dr. Puerckhauer recommends a novel and simple, and, at the same time, competent treatment for in-grown toe-nail. A 40 per cent. solution of **Potassium** is applied warm to the portion of the nail to be removed. After a few seconds the uppermost layer of the nail will be so soft that it can be scraped off with a piece of sharp-edged glass; the next layer is then moistened with the same solution and scraped off; this must be repeated until the remaining portion is as a thin piece of paper, when it is seized with a pincette and lifted from the underlying soft parts, and severed from the other half. The operation does not require more than half an hour's time, is painless and bloodless, while the patient is delivered from his suffering without being disabled even for an hour.

REFERENCE.—"Therap. Gaz.," Nov. 16, 1891.

TONGUE (The Surgery of). *F. S. Eve F.R.C.S.*

As a contrast to the method of removal of the tongue, advocated by Mr. Whitehead, of which a summary was given in the "Annual" of last year, it may be of interest to refer to an address on the same subject by Mr. Jonathan Hutchinson.[1]

He dates the beginning of progress in successful operative procedures upon this organ from the introduction of the écraseur. He states that experience has proven that it is by no means necessary to excise the whole of the organ in cases where the disease is limited to one part. Recurrence is far more liable to be observed in more or less distant lymphatic glands than at the seat of operation. The real risk in these operations is that of gland infection, and this begins almost from the very day that the sore assumes suspicious features. The cases in

which it is necessary to remove absolutely the whole of the organ are but few, and will become less frequent as early diagnosis is better understood. In the whole of the author's experience of surgery of the tongue there were but four cases in which the disease returned in the organ itself, or, indeed, in the mouth.

In at least three-fourths of the cases the disease recurred in the glands; in many the intervals were very considerable. Experience, however, compels the admission that, however early the stage at which the operation for cancer of the tongue is performed, the probability is very great that enlargement of the lymphatic glands will sooner or later follow. In very few of the cases in which the glands become enlarged, are conditions favourable for operation with an ultimate successful result. It is a rare exception after removal of involved glands for the patient to enjoy any long-continued immunity.

The author has never on a large scale tried any other operation than that by the écraseur. Cutting through the tongue should occupy half-an-hour by the watch

Since the patients who suffer from cancer of the tongue are often old and debilitated, and hence stand even moderate loss of blood badly, and since bleeding into the mouth in one who is under an anæsthetic is always attended by the danger of secondary pneumonia, and since the écraseur-wounds heal well and do not occasion septic poisoning, this instrument should for general use take precedence of all others in excisions of the tongue.

The author states that he has lost but one patient from this operation.

Mr. W. Arbuthnot Lane and Dr. Mansell[2], suggest a modification of the operation of excision. It consists, in the case of removal of a half of the tongue, in the very accurate suturing of the cut margin of the mucous membrane on the dorsum of the tongue, to the edge of that covering the floor of the mouth, in such a manner that no raw surface is left uncovered by mucous membrane. In some cases it is necessary to alter the form of the portion of the tongue left, so as to make it fit the gap with perfect accuracy.

This is, however, easily met by a little ingenuity, and assistance may often be obtained by loosening the mucous membrane from the floor of the mouth and gum. When it is necessary to remove the body of the tongue, after carefully defining the extreme limits of the growth, and giving it a wide margin, a large flap of mucous membrane with a substratum of muscular tissue, is sliced off from that portion of the tongue which is of a certainty free from growth, and this flap is

accurately sutured with fine silk sutures to the free margin of the mucous membrane on the floor of the mouth, and to that covering the root of the tongue, in such a manner as to cover the whole of the raw surface of cut muscle, which is left exposed by the removal of the tongue.

The very vascular flap of muscle and mucous membrane unites with remarkable rapidity to the subjacent raw surface, and in this manner, within a few hours of the operation, the floor of the mouth is covered by a smooth layer of mucous membrane, instead of by a large inflamed or granulating area, discharging abundantly a secretion which rapidly decomposes, and which may be, and often is, readily sucked into the larynx and air passages, where it produces trouble, with which we are only too familiar.

REFERENCES.—[1]Hutchinson, "Brit. Med. Jour.," No. 1614, 1891; [2]Lane and Mansell, "Lancet," July 11, 1892.

TONSILLITIS. *P. Watson Williams, M.D., Lond.*

From observation of a number of cases, where suppuration was marked, Dr. Frank Norbury[1] was led to use **Sulphurate of Calcium,** with the hope that from Ringer's ardent advocacy of its use, in boils and other suppurative processes it would, in a measure, relieve the suppurative condition present in these cases of tonsillitis. The results were most gratifying, and in some cases the attack was aborted.

In acute cases, suppuration has been prevented, the febrile symptoms, pain, etc., being greatly modified. Small doses (⅛ to ½ grain), frequently repeated, best subserve the therapeutic action of the drug. Antiseptic local treatment is indicated, and where suppuration has taken place, immediate evacuation of the pus should be made and the cavity thoroughly cleansed.

The author prefers the method of Dr. G. V. Black, in the treatment of abscesses of the mouth and throat, which is briefly this: **Peroxide of Hydrogen,** to which has been added a little **Oil of Cassia.** The oil of cassia—a thorough and efficient antiseptic—is, by the aid of the peroxide of hydrogen, thoroughly disseminated, even to the remote pockets of the abscess.

Pharynx and Larynx (Catarrh of).—Dr. A. Kellgren,[2] in his interesting little book, "The Technic of Manual Treatment," has described some applications of massage to the throat.

For "shaking," the distal phalanges of one or more fingers softly applied to the skin execute a quick movement communicated from slight flexions and extensions of the elbow joint, and the movement is continued for a few minutes at each occasion. Kellgren maintains that "it promotes and quickens absorption; it stimulates and

strengthens ; it diminishes pain by its power to reduce congestion and inflammation ; and it increases the secretion of the glands."

The tongue, submaxillary and sublingual glands, and the whole of the pharynx, can be acted upon in this manner, and the effect of the manipulations "is very rapidly beneficial in nearly all affections of the throat." Similarly the larynx and upper part of the trachea may be acted upon. In "nerve vibrations" it is the nerve itself which is subjected to the "vibrations," and may be applied to the cervical nerves for the relief of insomnia, hemicrania, and migraine ; to the supra-trochlear and nasal nerves for the relief of coryza ; to the facial nerve for paralysis of the same, to the lingual, superior or inferior laryngeal nerves. Amongst the cases mentioned, illustrative of the benefits of this treatment, are those of patients with acute tonsillitis, in whom dysphagia appears to have been immediately relieved, swelling of the tonsils diminished, and temperature reduced. It was also favourable in diphtheria and post-diphtheritic paralysis.

The method of applying massage directly to the affected mucous membranes has been detailed by Braun, of Trieste, and by Laker. A sound, covered with a wad at its extremity, is introduced into the nasal cavity, and regular and rapid vibrations are transmitted through it to the mucous membrane. Under such treatment Laker claims that marked improvement, even cure (as such a term is understood by the patient) follows, not only in slight cases, but in those in whom chronic affections have lasted for many years. The application of this treatment is only to be learned by great effort, and even then must always remain in the hands of the few who are specially adapted for performing such manipulations. Continuous vibration, as understood by Kellgren, Braun, and Laker, is something totally different from massage as it is practised by the ordinary masseur, whose manipulations are coarse and clumsy compared with the delicate vibrations of the operators mentioned. Thus Laker performs vibrations which vary between 600 and 2000 per minute, the ordinary duration of each vibration being 0·085 of a second. These applied to any points of the mucous membrane regularly, result in benefit, but irregularly conducted vibrations are only productive of painful sensations and harm. Laker states that a whole series of vibrations can be applied with a difference of only one hundredth of a second between each.

Chronic inflammatory conditions (catarrh) are especially amenable to this treatment. As a general rule hypertrophic forms yield more easily and are more readily cured than the atrophic forms, independently of the duration of the condition which of course influences the time

when cure may be anticipated. Those conditions which lead to narrowing of the nasal passages, and which may be accompanied by "reflex neurosis," offer a very favourable field for vibration treatment. After the first sitting there is generally some swelling of the soft parts and even hypersecretion, lasting for five days to a week, but it is a favourable sign. Though immediate relief is sometimes felt after the first application, patients should be warned that this is not usually the case. Improvement is generally intermittent, and there are pauses in the course of the treatment when improvement is stationary. However this may be, such pathological reflexes as headache, migraine, lachrymation, depression, loss of memory, cough, neuralgia, asthma, which may have existed unrelieved for many years, not seldom are ameliorated after the first sitting and yield in an almost magical manner to subsequent treatment. Though the cautery relieves a number of cases by removing swellings, growths, hypertrophies, etc., it fails to cure some of these cases, especially those in which there is little in the way of overgrowth of tissues, and in these cases, which are amongst the most disappointing that the rhinologist has to deal with, it would seem as if "vibration" treatment might well replace the commonly applied treatment. Indeed, there seems much ground for Laker's remark that the indications for galvano-caustic treatment require to be largely circumscribed in view of what vibration massage is capable of accomplishing. It is not to be thought, however, that galvano-caustic measures can be entirely supplanted by massage, and Laker even uses the cautery snare as an adjunct treatment, especially for the removal of hypertrophies which remain after massage treatment. After removal of multiple polypi, massage appears to be especially beneficial in restoring the degenerated mucous membrane from which they have sprung, which otherwise would doubtless be cauterized and transformed into cicatricial and physiologically useless tissue. Atrophic and dry catarrhs show great improvement and even cure from vibration massage. Their treatment, of course, demands a much longer time than the hypertrophic catarrhs, but the massage treatment of atrophic catarrhs would seem to hold out more favourable hopes than any other form of therapeutics, and this indeed is only what we should expect when we consider that such treatment must of necessity tend to restore the physiological integrity of a mucous membrane which has undergone trophic changes.

For application of "vibration" to the retro-nasal space a special sound is required, which is fixed in a handle, so that the whole hand and not merely the fingers manipulate it. In the pharynx proper, Laker uses "tapotement" as well as vibration. Laker states that the

several chronic catarrhal changes of the retro-nasal space are often improved in an amazingly short time by "vibrations." When the whole of the upper air passages has to be treated, he does so in the following order: (1,) nose; (2,) larynx; (3,) retro-nasal space; (4,) pharynx. We read with some astonishment that the obstruction caused by adenoid growths will disappear in young patients, doing away with the necessity of operative interference. This statement is founded upon the fact that of six cases of post-nasal growths not operated upon by Dr. Laker, a complete cure was obtained by "vibration-massage." Pharyngitis granulosa amends under the treatment, which is prefaced by cauterizing the granules. While we may be tempted to remark that by preliminary treatment of this character we eradicate the disease, which effect can scarcely be attributed to massage, it is the secondary troubles to which the granules give rise that "vibration" benefits. In that obstinate form of disorder, "pharyngitis sicca," the treatment is highly beneficial.

The tonsillar catarrhs so frequent in children are relieved by massage.

The numerous forms of catarrh of the larynx, which lead to loss of function of the mucous membrane and underlying tissues, seem to be directly amenable to vibration massage, and it can be readily understood that paresis of laryngeal muscles cannot fail to benefit in the manner that other muscles of the body do from massage. Infiltrations can be made to disappear, and ulcers can be healed, whether catarrhal or specific (tubercular or syphilitic), which is explained by Laker with some plausibility to be due to the restoration of circulatory phenomena round the base of the ulcer, the reason why they do not oftener spontaneously heal being due in such cases to chronic tissue changes in the tissues subjacent to the ulcer. Much weight is lent to this observation of Laker's by the daily experience of laryngologists as to the spontaneous cure of many small laryngeal ulcers, provided they are only kept clean.

The performance of endo-laryngeal massage is naturally more difficult than similar applications to the nose or pharynx, and entails a knowledge of laryngoscopy. A sound, similar to those previously described, and armed with a wad soaked in 10 per cent. cocaine solution is employed, the instrument being grasped in the hand, and not merely in the fingers, as in intra-nasal massage. The sound being enclosed by the vocal cords, each in turn is pressed upon, then the anterior commissure, and finally the inter-arytenoid space.

REFERENCES.—"Therap. Gaz.," May 16, 1892; "Gazzetta Medica di Roma," No. 17, 1890, p. 423.

TONSILS (Diseases of). *P. Watson Williams, M.D., Lond.*

Hypertrophy of Tonsils.—The introduction of many forms of tonsillotome and the frequent advocacy of very various methods of treatment of enlarged tonsils, are a certain indication that no one instrument is without its drawbacks, and no one method of treatment is, spite of dogmatic assertion to the contrary, beyond criticism. Dr. Vittoria Grazzi has used the galvano-cautery in the treatment of the above mentioned affection and chronic follicular tonsillitis, and the excellent results which he has obtained cause him to emphasize the importance of this method of treatment, and to recommend it to the profession; the more as it has not, up to now, received the attention which it deserves. In regard to the indication for the use of the cautery, the author states that if the tonsils be of large size, round, movable and projecting from between the pillars of the fauces, it is better to operate with the tonsillotome; but if the tonsils are not very large, and especially if the irregular forms of hypertrophy with adherent tonsils are in question, covered partially by the anterior fauces and extending downward toward the base of the tongue, the author does not hesitate to give the preference to the galvano-cautery. The latter method is also indicated in persons who dread an operation in the cavity of the mouth, or in the throat, and in anæmic individuals where a reduction in the size of the tonsils is desirable without loss of blood, which latter is sometimes abundant after operation with the knife.

Enucleation has been revived by Mr. Pollard[1]. The surgeon places the tip of his forefinger between the upper and back part of the tonsil and the posterior pillar of the fauces, tears through the mucous membrane at that spot, and then peels off the tonsil from the wall of the pharynx until it hangs loose in the throat by a short pedicle attached to its lower and anterior part. The pedicle may be either torn through by twisting it or snipped across with a pair of scissors. The operation is often an almost bloodless one.

Although advocating enucleation as a most useful method of removing tonsils in suitable cases, he freely admits that Mackenzie's guillotine and a pair of vulsellum forceps are ideal instruments for performing the operation in the majority of cases, and he usually employs them for the purpose, but sometimes they are unsuitable. In some cases the tonsils, though very large and the cause of much obstruction to respiration, are so buried between the pillars of the fauces and so soft and friable that they cannot be drawn through the ring of the guillotine. The crypts are often at the same time very large and plugged with very septic concretions. Such tonsils may be partially destroyed and scarred by burning them with the galvano-

cautery, but several sittings are required in order to do this satisfactorily. They may, however, be removed completely at one sitting under chloroform by the enucleation method which I have just described. He has practised this operation on many occasions, and has been very well pleased with it.

Mr. Pollard remarks that the operation of enucleation of tonsils is a very old one, and that it was re-introduced to the notice of the profession by the Italian surgeon Borelli in 1861.

REFERENCE.—"Brit. Med. Journ.," June 4, 1892.

Synopsis—(Vol. 1892, p. 493) Where tonsils are too large for destruction by **Galvano-Cautery**, Toison removes them with a form of **Cold Snare**.

Itzig has used **Creolin**, 1% solution diluted with equal parts or more of warm water as a gargle several times daily, and with marked success.

Wright found **Salol**, 60 to 90 grs. daily, gave good results in lacunar tonsillitis, less useful in catarrhal pharyngitis, and least in well-developed quinsy.

(John Ridlon, M.D., Chicago.
TORTICOLLIS. *(Robert Jones, F.R.C.S., E.*

Dr. Royal Whitman, "On Observations on Torticolis, with particular reference to the significance of the So-called Hæmatoma of the Sterno-Mastoid Muscle," concludes that, contrary to the prevailing theory, the causes of congenital wry-neck operate in the majority of cases before birth rather than during delivery; that acquired torticollis in very young children may be as persistent in duration, and as disastrous in results, as the congenital variety; the age of the child, the persistence of irritation, the arrest of development in the contracted parts, and the rapidity of growth, being the determining factors; and that here, as elsewhere, the prevention of deformity in the first instance, or its rapid rectification, if seen in later stages, should be the object of our therapeutic efforts.

F. S. Eve, F.R.C.S.

Dr. R. H. Sayre recommends a convenient apparatus for cases of torticollis after operation. It consists of a plaster-of-Paris jacket and a jury-mast, the upper part of which has a fan-shaped expansion fitting the occiput. After a thorough subcutaneous division of the sternal and clavicular attachments of the muscle, the patient is allowed to come out of the ether, and then a tightly fitting football cap is pulled down over the ears, and covered with a plaster bandage, which also includes the expanded portion of the jury-mast. In applying this dressing care is taken to place the head in the normal position. The mechanical appliances usually employed for the after-treatment of these cases are difficult and tedious to make, and must be made for each patient, and even then are hard to keep in position.

REFERENCE.—"Med. News," Oct. 24, 1891.

TRACHELORRHAPHY. *Wm. J. Smyly, M.D., F.R.C.P.*

In the "Centralblatt. für Gynäk.," No. 36, p. 91, Dr. Sänger describes his method of closing fissures of the cervix by flap splitting. He considers that the connection between cancer and ectropium of the cervix justifies operation in every case of deep cervical laceration. An objection to Emmet's operation is that it is liable to cause narrowing of the cervical canal, from which this method is free; the canal

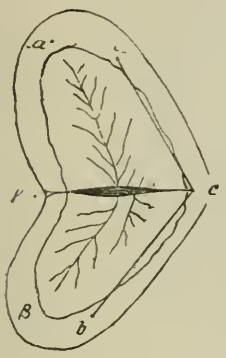


Fig. 61.

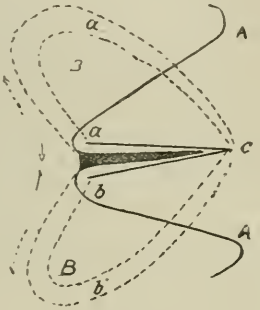


Fig. 62.

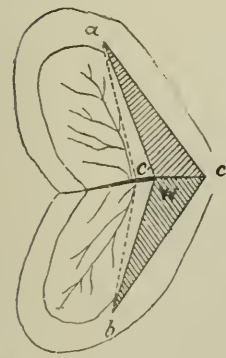


Fig. 63.

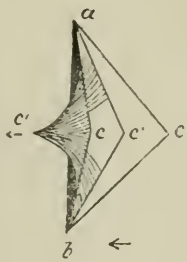


Fig. 64.

is left in its normal state, and the os is wide transversely. I have frequently restored the cervix by this method, and consider it preferable to any other with which I am acquainted, both in facility of performance and the complete restoration of the normal condition.

The patient having been placed in the lithotomy position, and the vulva and vagina carefully disinfected, the lips of the os cervicis are

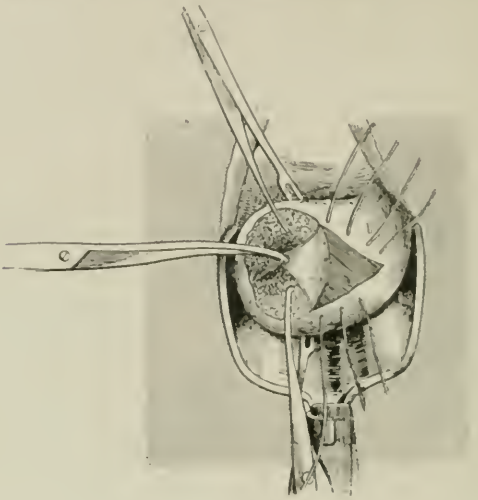


Fig. 65.

drawn down by (Schultze--Alfeld) forceps. The normal canal is then determined, as well as the extent of laceration on either side. Three

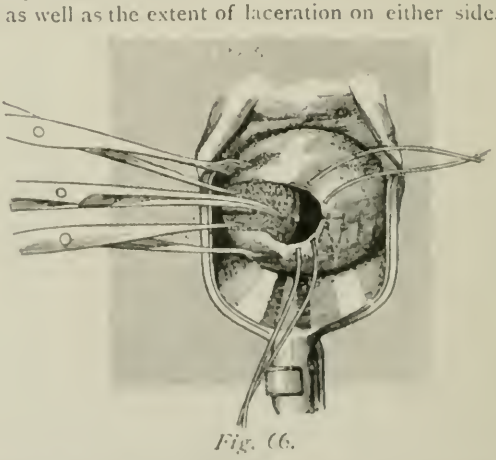


Fig. 66.

points are next marked with the knife, one on each lip of the cervix,

where the cervical wound is to terminate below, and the third at the upper angle of the rent (*Figs.* 61, 62, 63, 64, *a*, *b*, *c*). The same having been repeated on the opposite side, the position and extent of the future os uteri is clearly defined. Incisions are now made from *a* to *c*, and from *c* to *b* along the margins of the tear. A triangular flap is thus separated, and is drawn by forceps over towards the opposite side.

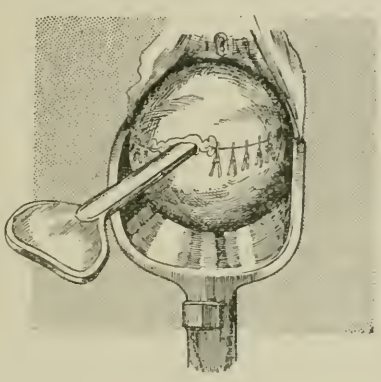


Fig. 67.

The sutures, four to seven in number, are of silk, or silkworm gut, and are placed at right angles to the long axis of the cervix, the last two including the flap, and are tied on the vaginal aspect of the wound. The opposite side is treated in the same way. The patient can leave the hospital at the end of the first week, but the sutures are not removed for three or four weeks. (*Vide Figs.* 65, 66 and 67.)

TRACHOMA. *William Lang, F.R.C.S.*

Von Hippel has tried the plan of rubbing the conjunctiva of the everted lids with a piece of cotton wool dipped in a solution of **Corrosive Sublimate** of the strength of 1 part in 2,000. Cocaine was used, and when possible the trachoma bodies were squeezed out. The amount and energy of the rubbing, which was repeated daily, depended on the age of the case. Where the conjunctiva was vascular and velvety it was less than in those where there was much scar tissue, and but little vascularity.

The results were encouraging; mild cases were cured in three or four weeks, whilst the more severe required seven to eight weeks, and shrinking of the conjunctiva did not appear to be so great as after the employment of other methods.

TREMOR. *Graeme M. Hammond, M.D., New York.*

Dr. Charles S. Potts reports several cases of simple tremor which were cured by **Sulphate of Sparteine.** In one case of paralysis agitans the sparteine was not successful. There is little reason to hope that the tremors of organic nervous diseases can be permanently benefited either by sparteine or by other remedies; but in cases of simple tremor, which are usually functional, Dr. Potts's form of treatment should receive favourable consideration.

He advocates the administration of ¼ grain doses of sulphate of sparteine three times a day. In a few days the dose may be increased to ½ a grain. In all of the functional cases in which he tried it the improvement which followed was prompt and well marked.

REFERENCE.—"Therap. Gaz.," June 15, 1892.

TRIGEMINAL NEURALGIA (Surgical Treatment of).

F. S. Eve, F.R.C.S.

This subject has been ably discussed during the past year by Mr. Victor Horsley,[1] and later by Mr. William Rose.

Horsley first advises recourse to drugs. He places most confidence in **Quinine,** combined with **Arsenic** and **Gelsemium.** Antipyrin and antifebrin are sometimes of service; opium is to be avoided. Chloride of ammonium, aconitine, and counter-irritation over the point of emergence of the nerve, or over its course, are useful. In some cases the galvanic current relieves the pain. When these measures prove ineffectual, nerve-stretching, neurotomy, or nerve-avulsion must be considered. Walsham and Dumont have reported successful cases of nerve-stretching. The result, however, is not lasting; hence section of the nerve was combined with the stretching; but since the divided nerves frequently united, and this very promptly, neurectomy, or excision of part of the nerve, offers the best chance of effecting a cure.

The treatment of neuralgia of the first division of the fifth nerve, presents no points for comment, consisting only in excision of the supra-orbital, and possibly of the supra-trochlear branches. Severe or epileptiform neuralgia of the second and third divisions is much more frequent. In dealing with the second division, or infra orbital nerve, Horsley performs a slight modification of Carnochan's well-known operation.

The eye should first be protected from the irritating effect of strong lotions. This is accomplished by passing a horse-hair suture through the skin of the lids. An incision following the lower orbital margin is then made. This is joined at right angles by a small cut, half to three-quarters of an inch in length, and lying over the position of the

foramen. By stripping the periosteum downward the nerve is exposed at its point of exit, together with its artery, and both can be separately secured by a silk ligature. The periosteum is next detached from the orbital floor. If it be preserved intact, the fat filling the cavity (which is often a great hindrance to the operation) is entirely kept out of the way. Next, the foramen is opened by a sharp pair of bone-forceps, and the roof of the canal is detached by means of forceps, or a dura mater elevator. The nerve and artery can now be detached for their entire length. In some cases the antrum is necessarily opened ; this occasions very slight inconvenience. The bottom of the wound should be filled with boracic powder, when the whole can be sutured, and union obtained by first intention.

The inferior dental nerve is the branch of the third pair most frequently affected by neuralgia. The lingual, the buccal, and the auriculo-temporal nerves, are also involved at times. The two former are readily reached, the former by dividing the mucous membrane from the mouth opposite the middle of the ascending ramus of the jaw, and the latter as it crosses the zygoma, between the temporal artery and the pinna of the ear. When the inferior dental is attacked, the nerve may be reached from the mouth or from the outside, either as it enters the canal or after it is in it, or it may be sought at the base of the skull.

Horsley discards the operations in which the nerve is attacked in the dental canal, on the ground that it is not sufficiently removed between the foramen ovale and the upper end of the inferior dental canal. He has devised an operation which has for its aim the separation of the lingual and dental nerves from their continuation with the main trunk just outside of the foramen ovale. This he accomplishes by making an incision, beginning above the upper border of the root of the zygoma, and carried straight down the front of the tragus, following the contour of the jaw behind the angle forward, just below the lower border of the body, as far as the facial artery. The triangular flap thus marked out is then raised, the knife cutting the layer of fat and superficial fascia, which lies immediately over the deep masseteric fascia. This flap is drawn forward and upward until the anterior border of the masseter is reached, and the edge of the parotid and the lower border of Stenson's duct are well defined. Next, the fascia and muscle are divided between Stenson's duct and the highest branch of the facial nerve. The masseteric fascia is split horizontally between them, over the whole breadth of the muscle. The arteries wounded in this cut should be tied. The fascia is then seized by dissecting forceps, and undermined all round

by blunt dissection. By means of retractors and dissection, the opening of the masseteric fascia can be enlarged, until it is over an inch in diameter. The parotid gland should be retracted towards the ear, so that the posterior border of the angle of the jaw can be readily detected. The masseter muscle is then divided, preferably with scissors, on the jaw, for the posterior two-thirds of its extent. The rapid oozing from muscular branches can be stopped at once by application of small sponges wrung out in very hot lotions. The periosteum of the jaw is then peeled off, together with the superjacent muscle, until the finger and the electric light have rendered evident the sigmoid notch, the posterior border of the coronoid process, and the neck of the jaw. A U-shaped piece is then excised; this consists practically in extending the sigmoid notch down as far as the upper orifice of the dental foramen. This exposes the inferior dental artery, and behind this the inferior dental nerve. The internal maxillary is also seen, and, if so diseased that it stands manipulation badly, should be ligatured and divided. The inferior dental nerve is secured by a ligature at its lowest part, and traced upward to the point where it is coming from beneath the external pterygoid muscle. This latter structure is levered upward with the retractors, when the nerve can be followed to within two-fifths of an inch of the foramen. It should then be cut as high as possible, and the piece removed. The lingual nerve lies half-an-inch deeper than the inferior dental, in a line vertical to the ramus, at a point just above the dental foramen. Hence, search must be made for the nerve in the direction thus indicated, unless it is exposed by the previous dissection. The wound is sponged out with warm sublimate solution, all bleeding points, including the smallest, are ligatured with fine catgut, and a small drainage-tube is laid upon the bottom of the hole, just above the lower angle of the jaw, and the skin edges are carefully approximated with horse-hair stitches. The drainage-tube is removed in twenty-four hours.

In cases where recurrence of the neuralgia takes place, after removal of a considerable portion of the inferior dental nerve through the enlarged sigmoid notch, as described above, Horsley has found that the Pancoast-Salzer operation, with slight modification, affords a very useful means of obliterating both the second and third divisions of the fifth nerve, not merely at the base, but actually within the skull itself.

This operation is performed as follows: A convex flap is made from the root of the pinna across the temporal muscle, and then joining the ridge, and following that down behind the external angular process and margin of the orbit, to terminate just below the middle of the

malar bone. This incision is carried down to the bone throughout, except at the fore part of the temporal fossa. The flap is then turned downward, including skin and superficial fascia and fat only, as low as the centre of the zygoma. The deep fascia covering the temporal muscle is then divided by a deep incision running parallel to the upper border of the zygoma, and at about two-fifths of an inch from this. The upper part of this is turned up, and the temporal muscle exposed. The malar bone and root of the zygoma are then divided by means of an Adams' saw. The zygoma is then forced downward, carrying with it Stenson's duct, and the branches of the facial nerve uninjured. The upper portion of the coronoid process is then cut off with strong forceps, and may be removed, together with the lower portion of the temporal muscle. The free bleeding is readily controlled by irrigation, with very hot antiseptic solutions. The external pterygoid is detached from the sphenoid with the elevator, and pushed down until the foramen ovale is completely laid bare. The skull may be trephined, and the nerves removed from within, or they may be drawn out and divided.

In spite of this free division of the nerve, it may happen that the neuralgia will recur. In this case removal of the Gasserian ganglion may be considered. Dissection has shown that the upper half of this ganglion cannot be stripped from the cavernous sinus without tearing the walls of this cavity ; hence it would seem that only a portion of this ganglion can be removed. Therefore, in place of excising the ganglion, the operation of dividing the nerve behind the ganglion naturally suggests itself. The fifth nerve enters the dura mater just beneath the edge of the tentorium, and lies in a roomy canal, joining the Gasserian ganglion, which lies in a similar cleft of the upper surface of the petrous bone, and on the roof of the carotid canal.

Horsley opens the middle fossa of the skull through the temporal region, and, after incising the dura mater, partly moulds and partly lifts the the temporal-sphenoidal lobe upwards, so that by means of an electric illuminator the base of the skull can be seen. The root of the nerve is looked for as it emerges from the pons and divided, and by again incising the dura, can be reached and removed.

Rose[2] takes objection to this operation on the score of the difficulty of reaching the ganglion, as well as of its severity. The compression of the brain cannot be beneficial to it, and hæmorrhage to a considerable extent is liable to occur, not only from some small veins passing from the brain to the superior petrosal sinus, but also from the sinus, which can scarcely escape division.

He prefers removal of the Gasserian ganglion by trephining the

base of the skull by an operation, closely resembling the modification of Pancoast's operation, as performed by Mr. Horsley. A nearly semi circular incision is made by entering the knife just below the outer angular process of the frontal bone, and carrying it back along the upper border of the zygoma to its posterior extremity. The incision now passes down in front of the ear, over the parotid region, to the angle of the jaw, coursing forwards along the lower border of the horizontal ramus as far as the facial vessels. The flap so marked out is dissected up, care being taken not to interfere with the facial nerve or Stenson's duct; during the operation it may be stitched out of the way to the upper part of the chin, and there protected from injury by a gauze dressing. The zygoma is detached, and turned down with the masseter, the coronoid process divided and removed with the lowest portion of the tendon of the temporal muscle, and the external pterygoid is detached from the sphenoid bone.

The trephine is then applied to the great wing of the sphenoid, a little anterior and external to the foramen ovale, and in such a way that the circumference of the disc just impinges on its outer wall. The opening thus made can be subsequently enlarged, if necessary, in any direction desirable. It must not be forgotten that the thickness of the skull in this position is very unequal, being thinner on the outer margin of the trephine track than on the inner; and inasmuch as the instrument is necessarily applied at an angle, the outer half will be cut through before the inner. This fact renders damage to the dura mater possible, unless careful precautions be taken. The trunk or stump of the third division is used as a guide to the ganglion, which should be loosened from its resting-place upon the apex of the petrous bone. No great difficulty will be experienced as regards the posterior half; but inasmuch as the anterior and upper portion is closely incorporated with the dural sheath, it is better to sever the root as far back as possible, and then draw the ganglion forwards. For this purpose the hooks made by Mr. Hawksley, one of which has a cutting edge upon its concave aspect, will be found useful. It is quite possible that in dividing the root of the nerve, a prolongation of the sub-dural space may be opened, from which a little cerebro-spinal fluid will trickle. The second division is now searched for and divided, and the ganglion pulled away piecemeal with forceps, or with a small curette, as recommended by Professor Andrewes; no attempt should be made to isolate and divide the ophthalmic division.

Mr. Rose has operated five times, and Professor Andrewes twice. All the former's patients have remained free from the typical and terrible paroxysmal pain from which they previously suffered. But the

first case was done only twenty-two months before the report, and the last only sixteen days.

The effect upon the nutrition of the eyeball is decidedly serious. In the first case, the organ was lost, a result of suppurative panophthalmitis, and in two of the other cases the nutritive state was for the time considerably depressed. It is probable that the trophic centres for its nutrition are contained in the upper and anterior segment of the ganglion, and if this be so, the chances of damaging the eye may be lessened by leaving this portion intact, even though the trunk of the nerve be divided behind the ganglion.

Horsley justifies operations in these cases on the ground that trifacial neuralgia is a purely peripheral malady, affecting principally the small subcutaneous branches of the nerve, as well as the trunks of the fifth nerve, as they run in the bony canals of the facial bones. The cause of failure after resection, he believes, is often due to removal of too short a piece permitting of reunion of the cut ends.

He appends to his paper a table of nineteen cases, some of whom were operated upon two, three, and four times. In the majority, the cure was complete, although the period in which these patients were under observation is scarcely long enough to allow positive assertion on this point; thus, his earliest reported operation was in 1886.

He believes that as soon as drugs and electricity have definitely proved unequal to the task of controlling pain, the branch of the nerve affected should be excised. This implies a surgical operation of comparatively slight moment, and a slight resultant scar.

Dr. F. Hartley[3] reports a case of intractable neuralgia of the fifth nerve, successfully treated by division of the second and third divisions within the cranium and external to the dura mater. The skull was opened in the temporal region by an omega-shaped incision, having its base at the zygoma, and measuring a distance marked by a line drawn from the external angular process of the frontal bone to the tragus of the ear.

The curved and rounded portion of this incision reached as high as the supratemporal ridge, the diameter of the said circle being three inches.

This incision was carried down to the periosteum of the skull, except in the straight part at the base; the tissues were then retracted, and the periosteum divided upon the bone in the same direction, and as far as the straight part at the base.

With a chisel a groove was cut in the bone corresponding to the divided periosteum. This groove went to the vitreous plate, except at the upper angle, over the rounded portion, where it included the vitreous plate.

A periosteum elevator was here inserted, and used as a lever to snap the bone, on a line between the ends of the circular portion of the incision. In this way the breakage occurs along the lower portion of the wound, and a flap, consisting of skin, muscle, periosteum, and bone, is thrown down, exposing the dura mater over a circular area of three inches in diameter. The middle meningeal artery was then tied, the dura mater separated from the bone, and the floor of the middle fossa of the skull was exposed. Broad retractors were used to raise the dura mater with the brain, and to expose the foramen rotundum and the foramen ovale.

The second and third divisions were isolated at the foramen rotundum and the foramen ovale, and by slight pressure upon the dura mater it could be stripped from the nerves to beyond the Gasserian ganglion. These are divided with a tenotome at the foramen rotundum and the foramen ovale, and that part between these and a point beyond the Gasserian ganglion was excised. As this amount of nerve is not very great, the ends of the nerves were pushed through the two foramina, so as, if possible, to interfere with any reunion. In the retraction of the dura mater, owing to imperfect instruments, the third, fourth, and sixth nerves were somewhat injured. As no bleeding was present, the brain was allowed to fill the fossa. The flap—consisting of bone, periosteum, muscle, and skin—was replaced.

Time of operation, one hour and forty minutes; the patient was carried to the ward in good condition. Following the operation, ptosis of the left upper lid appeared, together with double vision and inability to move the eye.

At the end of six weeks the patient recovered from his paresis in the third nerve; the double vision, ptosis, and inability to use the third nerve have entirely disappeared.

At the end of six months the patient remains entirely free from pain, and has gained much in weight.

REFERENCES.—[1] Horsley, "Brit. Med. Jour.," No. 1613, 1891, and "Therap. Gaz.," Feb. 15, 1892; [2] Rose, "Brit. Med. Jour.," Feb. 6, 1892; [3] Hartley, "New York Med. Jour." Mar. 19, 1892, and "Annals of Surgery," May, 1892.

TUBERCULAR PERITONITIS.

Henry Dwight Chapin, M.D., New York.

Drs. Hartmann and Aldibert[1] have tabulated forty-eight cases of **Laparotomy** performed upon children suffering from tubercular peritonitis; forty-six were cured and two died. A certain number of those counted as cured were not subsequently observed. Bacterio-

logical and histological examinations were made in eighteen cases. All cases should not be subjected to this operation, intervention being indicated only when the peritoneal lesions are the principal ones from which the patient is suffering. Fever and cachexia, when they are due to a diseased condition of the peritoneum, strongly indicate operation.

Dr. Henoch[2] denies the earlier view that the chronic peritonitis of children is always of a tuberculous nature.

REFERENCES.—[1] Hartmann and Aldibert, "Ann. de Gynæ. et d'Obstet.," June, 1892 ; [2] Henoch, "Deutsch. med. Woch.," 1892, No. 1.

TUBERCULOSIS OF BLADDER. (See "Bladder.")

TUBERCULOSIS (Pathology of). *M. Armand Ruffer, M.A., M.D.*

The question of the infectiousness of phthisis is an extremely old one, and before the beginning of this century physicians of all nations had recognized that phthisis is of a contagious nature. The pathological anatomists had also come to the same conclusion, and Morgagni in his classical work naively said that he was unable to tell us much of the *post mortem* appearances of phthisis, because knowing how contagious the disease was, he always avoided, if he could help it, opening the bodies of those who had died from it. In Italy and in the South of France, there are old copies of edicts confining those who "spat up their lungs" to certain places, and measures were passed by governments for the purpose of putting a stop to the progress of the disease. It concerns us not to know why this notion of the contagiousness of phthisis fell into oblivion, but, nevertheless, the fact remains that when, in 1865, M. Villemin, basing his views on experiments, stated that phthisis was a contagious disease, that statement in France, in England, and in Germany was received with absolute incredulity. Nevertheless the work of Villemin was a great step in advance, for he was the first to prove experimentally that tubercular matter always produced tubercle and nothing else. Further, he was able to show that what is generally designated as scrofula is but another form of tubercle. Honour to whom honour is due ! And if we must give to Koch the great merit of having isolated and proved the specificity of the tubercle bacillus, he otherwise added little to what was already known about the contagiousness of tubercular material.

Koch in 1882 published in the Physiological Society of Berlin a note on the bacillus of tuberculosis. He stated that he had found the tubercle bacillus in various forms of tuberculosis, that he had been able to cultivate it, and by inoculating it into animals he had been able to reproduce the disease. He concluded that human or bovine tuberculosis was virulent, that a specific bacillus was the cause of

this virulence, that this bacillus was always found in tubercle, that it could be cultivated outside the body, and that when inoculated into animals, it produced the disease. Moreover, he gave a simple method by the use of which it was possible to recognize this organism wherever it might be present. I need not give here an account of the various methods by which the bacillus of tuberculosis can be stained, as the whole subject has been admirably summed up in an excellent book on "Medical Microscopy" by Dr. Wethered. It will be well, however, to give some account as to the powers of resistance of this micro-organism.

In the first place we must draw a sharp distinction between the life of a micro-organism and its virulence.

The virulence of its cultures in solid media disappears sometimes after forty or fifty days, but the organism may be alive, and be able to reproduce itself for over six months; although, when inoculated into an animal, it no longer gives rise to the disease. When placed in water at a temperature varying between 8 and 20 degrees centigrade it resists for fifty-two to seventy days, but after that period it has lost its virulence. It remains virulent however for two or three weeks at least, and in the same way resists intense cold for a long time, twenty or thirty days. Putrefaction also does not appear to kill the virus, as it has been found possible to reproduce the disease with pieces of lungs which had been buried for over one hundred and sixty days. Similarly in sputa, dried bacilli have been found to be virulent after six weeks or more, but they are killed by being heated up to 70 degrees centigrade for half an hour, unless the virus has been dried, in which case it resists heating for a much longer period. A practical point is at once apparent, namely, that if clothes or other articles soiled with tuberculous material are to be disinfected properly, and rendered harmless, they should first be plunged in water for a considerable time, so that the bacilli be well wetted before being exposed to the action of heat.

With regard to the way in which animals and man contract tubercular disease, more especially phthisis, it is undoubted that animals may be tuberculized by being made to inhale the dried virus. It is not necessary for this to use a pure culture of the bacilli, for animals have been rendered tubercular by inhaling the dried sputa of phthisical patients. A medical man of my acquaintance who had no hereditary taint of the disease, who was a strong disbeliever in the contagiousness of phthisis, submitted himself to the inhalation of dried tubercular sputa, with the dire result, that he and the laboratory boy who helped him, both died of miliary

tuberculosis in less than three months. Keeping these facts in view, and remembering the remarkable statistics of Cornet, who has demonstrated the appalling mortality of this disease among nurses, prison warders, and others in contact with phthisical patients, it becomes a duty for every medical man to warn his patients that by expectorating on the ground, or except into an antiseptic solution, he becomes a danger to his fellow-men. I have been lately informed by medical men practising in Australia, that since exportation of phthisical patients to Australia has become the fashion in this and other countries, phthisis has become an extremely prevalent disease in the native European population of Australia, among whom it was previously almost unknown.

The danger of contagion from meat and milk of tubercular animals is of small importance as compared with the danger from inhalation, but, nevertheless, it is a danger, as I intend to show here. In the first place it is an undoubted fact that bovine and human tuberculosis are one and the same disease. Moreover, unfortunately there are facts showing that human subjects have contracted the disease experimentally, so to speak, from animals. Thus a Danish veterinary surgeon has recorded a case of a young veterinary student who cut his finger with a knife whilst making a *post mortem* examination of a tubercular cow. Three weeks after the accident, the wound had healed but the neighbouring parts swelled, and a little time later an excoriation appeared, and the small tumour began to suppurate. In spite of appropriate treatment the local state got worse, and the surgeon cut out a subcutaneous tubercular nodule, in which well marked tubercle and specific tubercle bacilli were found. In another case a veterinary surgeon of Weimar wounded himself in the same way, but there the disease spread from the point of inoculation, and the unfortunate surgeon died in a few months from general tuberculosis. In another case six children suddenly perished from tuberculosis in a school in which the milk supply was derived from a tubercular cow.

The subject naturally divides itself into the question as to whether the meat, or milk of tubercular animals, or both are contagious. Although great light will soon be thrown on the question by the researches of the Royal Tuberculosis Commission, nevertheless a great deal of work has already been done on this subject. In the first place is it possible to contract tuberculosis through the alimentary canal? To that question the answer is in the affirmative, for the researches of Lingard, of Malassez, of Gerlach and many others, have shown that if guinea-pigs, or rabbits be fed with meat, or milk, or

any kind of food contaminated with tubercular matter, these animals invariably die of tubercle. The disease in animals so fed starts from the intestine, spreads to the mesenteric glands, and from thence throughout the body, although the mucous membrane of the intestine may show no pathological appearances whatever. The question before us is, however, whether the meat of animals dead of tubercle, contains tubercle bacilli or not. We must allow that it is exceedingly doubtful whether the muscle substance of tubercular animals contains tubercle bacilli in any large numbers. True, it has been shown that if the meat of tubercular animals be pounded in a mortar and the juice so expressed inoculated into animals, a certain number of the latter (nine out of forty-seven) die of tubercle, but it is clear from other experiments that the inoculation under the skin is a far more dangerous proceeding than absorption through the alimentary tract. It is true we must allow that by this method only a very few bacilli are introduced, for, of course, by far the larger number remain behind in the mortar. Nevertheless, in 1872 Herz and Gunter rendered two rabbits out of four tubercular by feeding them with meat of tubercular animals. Burnin gave the disease to pigs by feeding them with meat and milk of phthisical cows. Gerlach obtained similar results, and so did Johne and Peuch, but, on the other hand, Nocard was unable to render cats tubercular by feeding them with tubercular meat. We see, therefore, that if animals be fed with raw meat from tubercular animals there is some chance of their contracting the disease, but it must be remembered also that the meat which was used for these experiments often contained lymphatic glands, which were markedly tubercular. On the other hand we must draw attention to the fact, that a very moderate degree of heat soon destroys the virulence of the tubercle bacilli, and that meat cooked through and through is practically without danger. Hence, it appears to me that it is not justifiable to destroy, straight away, all the meat from tubercular animals, but that the remedy to be applied is that the meat from suspected animals be sterilized by heat before being sold at a reduced rate.

On the other hand, it has been abundantly proved over and over again that the milk from tubercular animals, especially when such animals suffer from tubercular disease of the udder, is nearly always infectious, and seeing the great difficulty there is in sterilizing milk, the only remedy which, in my opinion is applicable, is that the use of that milk should be absolutely condemned.

The experimental method has lately thrown some light on a question which has from the earliest times puzzled a great many pathologists ;

namely, Is tubercle an hereditary disease, or in other words, is a child ever born suffering from tubercle, just as a child may be born suffering from syphilis? Let us see what may be learned on this subject in the *post-mortem* room. It is true that it is extremely rare to find in a *post-mortem* room a newly-born child presenting well-marked coarse tubercular lesions; hence a large number of pathologists would at once declare their belief that tubercle is never hereditary in the strictest sense of the word. This, however, is a mistake, for since the researches of Koch, it is clear that the bacilli may be found long before the actual formation of tubercle, and hence we cannot say that there is no tubercle present unless we have made a diligent search for the bacilli. Now, by using this method, Landouzy and Martin found tubercle bacilli in a fœtus six months and a half old, born of a phthisical woman, which died six hours after being born, and showed no naked-eye appearances of tuberculosis.

Moreover, they inoculated pieces of its lungs into guinea-pigs and rabbits, which inoculation was followed by the appearance of tubercle. A similar result was obtained by inoculating the placenta and lung of a five months' old fœtus from a woman dead of miliary tuberculosis, and other French and German observers have confirmed these experiments. In animals also, veterinary surgeons have occasionally found fœtus from cows and newly-born calves suffering from tuberculosis. Experimentally, it has been possible to produce fœtal tuberculosis in pregnant animals rendered artificially tubercular. If then the fœtus be directly contaminated from the mother, let us see whether the same can be done by the father. It is probable that tubercle, just as syphilis, may be directly inherited from the father, for it has been shown by experiments that the apparently healthy semen of tubercular animals, will produce the disease when inoculated into animals.

It is also clear that children or animals born from tubercular parents, are themselves predisposed to phthisis, and this fact has been adduced to prove, though in my opinion wrongly, the heredity of tubercle. Although we find, as shown before, that tubercle is occasionally, but very rarely, strictly hereditary, the predisposition to the disease is certainly hereditary. The hereditary taint, however, is more often transmitted through the mother than through the father. Some statistics lately published have shown that out of seventy-eight families in which tubercle occurred, the disease had been transmitted fifty-seven times through the mother, and twenty-one times only through the father. M. Bang tells us that a veterinary surgeon of his country (Denmark) traced the history of

twenty-four calves born from tubercular cattle, and made the following observations. Ten of these animals were killed during the first week of life, and the presence of tubercles was demonstrated. Five were killed in the sixth week of life, and, although to all appearances perfectly healthy, were found to be tubercular. Six others were killed at the same age as the last, tuberculosis having been diagnosed during their lives, and three became tubercular after having been pregnant once. In this history, therefore, we can trace the part played by direct heredity, and the part due to predisposition. The tuberculosis of children may, therefore, be either congenital, just as syphilis is congenital, or else the child may simply inherit from its parents a predisposition to tubercle, just as it may inherit a tendency to gout.

The question as to whether scrofula and tubercle are one and the same disease, is one which is as old as the history of scrofula itself. The experiments of Koch, Lingard, and others, seemed to show that the same bacillus may act as the causative agent in both. Nevertheless, it would appear from the latest researches of Arloing that there is some difference of degree, but not of kind between the virus of tubercle and scrofula.

Clinical observation had shown that there were some differences between the two diseases. It had been noticed that scrofulous patients often died of phthisis, but, on the other hand, observers agreed that it was rare to see a phthisical patient contract scrofula when already phthisical. Moreover, phthisis is not necessarily dependent on scrofula, as many scrofulous patients end their days without showing any signs of phthisis. Hence, some observers separated the two diseases completely, and included under scrofula, enlarged glands, bone lesions, cold abscesses, lupus, etc., whilst everything else in their opinion, was tubercular. On the other hand, it had been shown that scrofula was so often followed by phthisis, that it was impossible to shut one's eyes to the possible relation between the two. With the discovery of experimental science that the inoculation of scrofulous lesions produced tubercle in animals, it was universally admitted that one and the same agent was the cause of both. Indeed, Cohnheim expressed this feeling when he said, "everything which transmitted experimentally causes the appearance of tuberculosis belongs to this disease, and everything transmitted in the same manner which does not produce tuberculosis, does not belong to that disease." If we admit the truth of this saying, then scrofula is undoubtedly tuberculosis, and tuberculosis is scrofula. M. Arloing has lately attempted to prove that there is a difference in degree, if not in kind, between

the two diseases. In 1883 he noticed that if rabbits were inoculated with the scrapings from human scrofulous glands, they often resisted, and did not die of tuberculosis. He then proceeded to inoculate comparatively, and in several ways, guinea-pigs and rabbits with tubercular, and with scrofulous material. He killed the animals after an equal period of time, and compared the lesions so obtained. The reason why he chose these animals is, that whereas guinea-pigs are extremely sensitive to the tubercular and scrofulous virus, rabbits have a much greater power of resistance. He found that whenever rabbits and guinea-pigs were inoculated with true tubercular material, both kinds of animals invariably died of this disease, but that when he used scrofulous material the guinea-pigs invariably died, but the rabbits generally resisted. Moreover, he saw that whenever the rabbits died, the progress of the disease in the patient from whom the virus was taken was generally an acute one, the patient ultimately dying of tuberculosis, but that whenever the lesions did not produce tuberculosis in rabbits, the patient generally got well. Two pupils of M. Arloing, MM. Courmont and Dor, inoculated extremely attenuated tubercle bacilli into the veins of young rabbits. During the five following months the animals showed no symptoms whatever, and their growth was not retarded, but at that period they began to get thinner, and three of them showed distinct lesions of various joints, whilst a short time afterwards the other two showed the same symptoms. At the post-mortem, distinct scrofulous lesions were found in the left knee, right shoulder, and the left elbow of the first animal; in the right knee, left elbow, and right tibio-tarsal articulation of the second; in the right knee, both elbows, and left tibio-tarsal articulation of the third, and the right knee of the fourth, and in the left elbow, and the tibio-tarsal articulation of the fifth. The local symptoms presented by these animals during life, were as follows: considerable swelling of the diseased joints, soft peri-articular masses which could be well felt under the skin, and apparently fluctuated. The movements were normal as usual, and produced no pain except when the joint was forcibly moved. At the post-mortem no tubercles whatever were found in any of the inner organs, but the joints presented all the characteristics of tubercular white swellings as seen in man. Bacilli were found in large numbers. It is clear, therefore, that the bacillus of tuberculosis when attenuated will give rise in animals to a modified disease characterized by lesions in the bones, but without any general tuberculosis. There is nothing illogical, therefore, in assuming that the bacillus of tuberculosis when sufficiently attenuated, will no longer produce phthisis, but chronic scrofulous lesions in man also.

Although this subject hardly enters into human pathology, I would draw the attention of those interested to the remarkable diagnostic value of Koch's tuberculin in animals. The experiments of Nocard have proved lately that by means of this substance tubercular affections can be diagnosed with certainty in cattle at a time when the animals show no signs of disease whatever. The same observer has also proved that a similar substance extracted from cultures of the bacillus of glanders, when injected into animals suffering from this disease, gives rise to a characteristic train of symptoms. By using that substance (mallein) the disease may be diagnosed in its earliest stage, and the spread of it arrested before it has had time to extend to other horses in the same stable.

TYPHOID FEVER.

Synopsis.—(Vol. 1892, p. 496.) The **Cold Bath** is much extolled as an antipyretic; it is given at a temperature of 68° F. for about fifteen minutes every three hours day and night, should the rectal temperature reach 102·2°.

Burney Yeo recommends **Chlorine Water**, made by putting 30 grs. **Potassic Chlorate** into a twelve ounce bottle, and pouring over it 40 ℥ of strong **Hydrochloric Acid**, gradually adding water and shaking to dissolve up the free chlorine; to twelve ounces 24 to 36 grs of **Quinine** and 1 oz. **Syrup of Orange Peel** are added, the dose being 1 oz every two, three, or four hours for an adult.

Dujardin-Beaumetz advises **Salol**, 30 to 60 grs. in twenty-four hours, and it may be combined with **Salicylate of Bismuth**. Cahall gives **Salol** in 3 gr. doses, at least every two hours, day and night, in powder form. Schmidt uses **Thallin**, ½ to 3 grs. in a day.

Wolff gave **Calomel** with Soda, 1 gr. doses every three hours for six hours, followed by **Gelatin Capsules**, containing 5 grs purified and finely powdered **Naphthalin** every four hours, alternated with a few drops of dilute **Hydrochloric Acid**, and stimulants as required. **Tinc. Gelsemium**, 2 to 10 drops (p. 47).

TYPHOID FEVER (Pathology of). *M. Armand Ruffer, M.A., M.D.*

The question of the causation of typhoid fever has lately attracted the attention of bacteriologists all the world over. It is now ten years ago that Eberth found a special bacillus in the Peyer's patches, in the spleen and lymphatic glands of human beings, who had died from typhoid fever. Moreover, the same bacillus has since been demonstrated in the spleen of the patient during life, so that there can be no doubt that this micro-organism is always present in patients suffering from that disease. Unfortunately, however, although everyone had been able to cultivate this bacillus, it was at first found impossible to reproduce in animals a disease resembling typhoid. During the last few years a number of observers in England, in France, and in Germany, have been able to give animals a typhoid-like disease, by the experimental inoculation of this bacillus.

In England, the late Dr. Tylden, who died from the very disease he was investigating, and whose researches have not yet been published, had been able to reproduce a disease fatal in one to five days, by the injection of pure cultutes under the skin and into the peritoneum in guinea-pigs. Moreover, by means of a special method, he had succeeded in producing immunity against this micro-organism. His researches were unfortunately interrupted by his death, and although it is to be hoped they will be published in full at some other time, yet I would claim at once for my late friend the credit of having first established the fact that the typhoid bacillus gives rise to a distinct disease when inoculated into guinea-pigs. I will now proceed to give a short account of two papers which have been published lately in the "Annales de l'Institut Pasteur," by Sanarelli, and by Chantemesse and Widal.

The first experiments which had been made on the typhoid bacillus left undecided the question of its virulence. If a small dose of this bacillus be injected into a mouse, the animal always dies after a few hours. In the rabbit the same micro-organism, when injected into the peritoneum or directly into the blood in fairly large quantities, generally proves fatal to the animal, but does not as a rule produce any intestinal lesions. In the guinea-pig inoculation of one or more cubic centimètres sometimes produces a fatal disease in that animal. Experiments, however, have shown that if the same bacillus be accustomed to live in these animals, the virulence of this micro-organism gradually increases. Thus if a guinea-pig be inoculated under the skin with a dose of from four to six cubic centimètres of a fresh typhoid culture, the animal dies in twenty-four to forty-eight hours, and the peritoneal cavity contains a large quantity of sero-fibrinous exudation, crammed with typhoid bacilli. If two or three cubic centimètres of this serous peritoneal fluid be mixed with ten cubic centimètres of beef-broth and left in a warm chamber for some hours, a smaller dose than the first proves fatal to a guinea-pig. By thus passing a virus through a number of animals it is so intensified that a very small quantity of it —half a cubic centimètre for instance—will kill guinea-pigs. The virus can also be intensified by inoculating an animal with the typhoid bacillus and a sterilized culture of some harmless micro-organism. This is an extremely interesting fact, and, as we shall see, throws some light on the mode of action of the typhoid bacillus in the human subject.

The animal inoculated with the typhoid bacillus shows distinct signs of fever. The temperature after two to six hours rises to 103°

or 104°; it keeps up at this temperature for some time, and then gradually falls below the normal until death follows. During the first hours of the disease the animal appears perfectly well, but as the fever progresses it retires into a corner of its cage. It there remains in a drowsy, sleepy state, does not move when touched, but appears to be in no pain. The abdomen is somewhat distended and tender on pressure. Such an animal, as I have myself noticed, presents all the appearances of the typhoid condition in man. At the *post mortem* examination, the peritoneal cavity contains a large amount of opaque, fibrinous, serous fluid, absolutely crammed with typhoid bacilli. The spleen is two or three times its normal size, and extremely congested. The liver is big, of a dark red colour, and is covered with a thin, fibrinous exudation. The intestine is extremely congested, and full of typhoid bacilli. The Peyer's patches and the mesenteric glands are rich in blood. The kidneys are increased in size, congested, and one generally finds some quantity of fluid in the pleural cavities, whilst the lungs, more especially in their posterior lobes, are in a state of hyperæmia. The bacilli may be found in all the organs, but an extraordinary fact is the rapid emaciation of the animal, which may lose one-fifth of its weight in twenty-four hours. One sees, therefore, that the typhoid bacillus produces in animals a disease, the pathological and clinical appearances of which strongly resemble what is seen in man, but at the same time differing in the more rapid course which it follows in the former.

An interesting fact also brought out by experiments is that, when injected in small quantities under the skin, the typhoid bacillus produces a local suppuration, and in this connection we must remember that in the abscesses occurring during typhoid fever in man, the same bacillus has been found in the pus. In fact the clinical and experimental facts closely agree, as they always do when properly looked into.

Not only is it possible to produce a disease resembling typhoid by the injection of this bacillus, but it is possible to render animals immune against it by injecting the sterilized products of the typhoid bacillus under the skin. The best way to do this is to inject every fourth or fifth day about 4 cubic centimètres of a sterilized culture under the skin. The animal loses flesh for some time, but when inoculated with the living bacillus, the latter produces no evil effects. Animals can also be rendered immune by injecting a very small number of the living bacilli under the skin.

It is possible also to render animals immune by injecting under the skin the serum of animals previously rendered immune against the

typhoid bacillus; and a very distinct proof that the bacillus which is used in these experiments is really the bacillus of typhoid fever is the fact that the serum of human beings who have lately suffered from typhoid fever and recovered, when injected into animals, renders the latter immune against this experimental typhoid fever.

Before proceeding further, we may now discuss another question, namely: The relation of the bacillus of typhoid fever to another micro-organism always present in the intestine of man and most animals, namely, the bacillus coli communis. This subject is of great importance to practical and theoretical hygienists. Unfortunately the morphological characteristics of both micro-organisms are almost identical, so much so that it is almost impossible to distinguish one from the other by their microscopic appearances, or by the naked-eye-aspects of their growths in the ordinary culture medium. Lately, however, a new method of differentiating micro-organisms from each other has been discovered, and this is based on the fact that different micro-organisms give rise to different chemical compounds when grown in certain media. We know, for instance, that certain bacilli turn acid the various nutritive media used, whilst others render them alkaline. But besides these somewhat coarse reactions there are other more refined criteria, by means of which micro-organisms may be differentiated, when every other means fails.

Let us take for instance a drop of culture containing what we suppose to be the bacillus coli communis, and another drop of a culture holding in suspension what we suppose to be the bacillus of typhoid fever. Let us inoculate one flask of potato, gelatine, agar, and broth with each, and examine these flasks at the end of a few days. Macroscopically and microscopically we shall find that the growths of each in gelatine, agar, and broth are practically the same, except that perhaps the bacillss of typhoid fever may appear to be more motile than its double, but under certain conditions they appear to be equally motile or equally sluggish.

Let us now examine the potato cultures, and assume the potatoes used to have been duly acid. We then find that the bacillus coli communis has grown in a thick, creamy, yellowish, moist layer; whereas the organism of typhoid fever forms a thin, whitish, almost invisible layer covering the potato. Here, then, we might suppose that at last we possessed a sure diagnostic sign between the two organisms, but it is not so, for on more careful examination it is found that these different appearances depend simply on the acidity of the potatoes. If, from any cause, the potatoes used for cultures have lost their acidity,

the bacillus of typhoid fever and the bacillus coli communis form growths which cannot be distinguished by any known optical methods. To the naked eye, and under the microscope, both are exactly the same, and present the same staining reactions. Chemistry, however, has furnished us with a method, by means of which the two micro-organisms may be differentiated in a few hours. The bacillus coli communis always causes sugars to ferment, whereas the bacillus of typhoid fever never does so. In order to demonstrate this fact, let us prepare flasks containing broth sweetened with lactose, 2 per cent., and add to each flask 1 or 2 ccs. of sterilized chalk. Let us sterilize the flasks, and now inoculate some with the bacillus coli communis, and others with the typhoid bacillus, and place all the flasks in a warm chamber at 37°C. After a few hours gas-bubbles arise in great numbers in the flasks inoculated with the bacillus coli communis, whilst these are altogether absent in those containing the bacillus of typhoid. The bacillus coli, therefore, causes milk-sugar to ferment, and the same chemical action will take place with saccharose, glucose, maltose, inulin, glycerine, etc., etc., but the micro-organism is powerless on starch or glycogen. Through this process of fermentation the milk-sugar may be made to disappear completely from such cultures, provided lime-water be added from time to time, so as to neutralize the acid formed, and allow the microbe to live. At the same time acetic acid is formed, whilst hydrogen and carbonic acid are given off. On the other hand, the bacillus of typhoid *never under any circumstances gives rise to the fermentation of sugars.*

If these two bacilli be grown in sterile milk, the bacillus coli communis, owing to the fermentation of milk-sugar to which it gives rise, causes the milk to coagulate, whereas milk *although swarming with typhoid bacilli remains to all appearances perfectly normal.* I possess in my laboratory milk, every drop of which contains millions of typhoid bacilli, and which would be passed by any inspector as first-class milk.

One might, judging from the facts enumerated above, feel inclined to think that the bacillus coli communis had nothing to do with the production of the symptoms of typhoid fever, but this would undoubtedly be a mistake. In the first place we must note that during the course of typhoid fever, like all diseases affecting the intestinal tract, the bacillus coli communis reproduces itself in enormous quantities in the intestine, so that it is present there in a state of pure culture almost. An increased multiplication of microbes means an increased elaboration of poisons, which being absorbed into the patient's system naturally play a part in the symptoms of toxæmia

always met with in typhoid fever. Moreover, it has been proved by several observers that when the door to the tissues has, so to speak, been opened by the typhoid organism, the bacillus coli communis forces its way into the internal organs, and is found in the liver, spleen, etc., side by side with the typhoid bacillus. We see, therefore, that although the bacillus of typhoid will alone produce typhoid fever, yet it also opens the road for the invasion of the human body by other microbes. Moreover, when an animal has recovered from an attack of typhoid fever, and the bacilli have disappeared everywhere except at the point of inoculation, it has been proved experimentally that a diffusion of the organisms may be caused to take place if a sterilized culture of the bacillus coli communis be injected under the animal's skin. We see, therefore, that in typhoid fever, as in other bacterial diseases, the disease is aggravated and may be rendered fatal even when several microbes are associated together. We may thus sum up with Sanarelli, as follows, our knowledge of the bacillus of typhoid fever :—

(1,) The bacilli of human typhoid fever in the state in which they are obtained from human patients are not very active on animals. We do not know whether the decreased activity is due to a natural resistance of animals, or rather to an alteration which these organisms have undergone in the human body ; but the rapidity with which the typhoid virus, even when very active, loses its pathogenic power when not cultivated continuously in the animal body, seems to show that the bacillus of typhoid fever is endowed with a rather unstable virulence only.

(2,) The toxic products of certain saprophytes (bacillus coli) are able to increase the virulence of typhoid bacilli. The fact that the saprophytes are the usual inhabitants of the intestine, where they sometimes multiply inordinately, tends to show that there is an important relation between intestinal saprophytism and typhoid fever.

(3,) The typhoid virus, when rendered pathogenic by the action of toxic products secreted by saprophytes or by successive passages through the peritoneum of certain animal species, causes in the latter a morbid process characterized by the multiplication and diffusion of micro-organisms through the whole animal system.

(4,) Rabbits, guinea-pigs, and mice are liable to succumb to experimental typhoid fever when the virus is inoculated into the peritoneum, veins, or subcutaneously. The infection lasts from twelve to forty-eight hours, and is characterized by a very short elevation of temperature, followed by a long period of collapsus.

(5,) The typhoid virus may determine characteristic morbid altera-

tions in every organ and every tissue, but the system which is always the most affected is the digestive system, and especially the small intestine, and this is the case whatever be the mode of introduction of the virus. This fact appears to disprove the notion that typhoid fever, although often affecting the intestine, must necessarily be caused by the virus absorbed from the alimentary tract.

(6,) The typhoid bacillus can not be considered as a true parasite of the blood, or as a true parasite of the tissues, nor does it act simply by producing poisons only. The blood acts only as a carrier of the virus, and contains the virus only when the latter is extremely active and the diseased animal possesses very little resistance.

(7,) When the typhoid bacilli are not virulent enough to give rise to an acute and quickly mortal process, they remain in the organism a long time, and give rise to a chronic process, characterized by small foci of suppuration which may heal, however, or give rise to cachexia, followed slowly by death.

(8,) During this chronic period of the typhoid infection, when the smallness of the suppurating foci, their small number, and the attenuation of the microbes remaining in the tissues cause one to believe that health will soon be restored, the injection of a small quantity of the poisons secreted by saprophytes causes a renewed virulence of the microbes, a new penetration of micro-organisms, and the death of the animal.

(9,) Animals which are capable of contracting typhoid fever may be vaccinated against this disease through the injection of small quantities of sterilized broth cultures, in which very virulent bacilli had grown.

(10,) The serum of animals vaccinated against the typhoid infection possesses marked therapeutic properties. It may altogether put an end to the morbid process, when its injection precedes or accompanies the introduction of the virus; it may also stop the progress of the disease if injected as soon as the first symptoms of the disease manifest themselves.

ULCER.

Synopsis—(Vol 1892, p. 501.) Bandaging and Recumbent Position, Massage of the limb and ulcer, Grafting new skin, bathing in Bichloride of Mercury Solution and Boric Acid applications; Excision of varicose veins. Aristol is said by some to be more healing than Iodoform. Elsner advises the primary application of Carbolic Acid, Corrosive Sublimate, Potash Permanganate, Bromine, Iodine, and other oxidating agents, followed by Zinc Oxide, Ichthyol, Resorcin, Sulphites, and other reducing agents. Granulation is sometimes promoted by stimulating astringents and antiseptics, *e g*, Red Wash (Sulphate of Zinc, 2 grs.; Rose Water, ℥j), Carbolic Acid, 2%, Lotio Nigra, Lot. Ac. Salicyl. (℥j to ℥ij).

Lot. Ac. Nitrici (mj to 3j), Lot. Tinc. Myrrhæ (3j to 3iv), Lot. Chloral Hydratis (3j to 3iv), Lot. Zinci Chloridi. Poultices of Linseed are useful when ulcers are irritable, but continuous Warm Bath is better. Where mechanical obstruction exists with dilated vessels and œdema, Strapping is necessary. Atkinson uses a Compress of Sheet Lead moulded to the part, and unfolded night and morning, cleansing the ulcer with weak Sublimate Lotion. Sheet Tin has also been suggested. Martin's Rubber Bandage. Multiple Incisions have been recommended in callous ulcers. Blistering is falling into disuse. Gordon Black's straps with Emplast. Saponis passed through hot Carbolic Lotion, first cleansing the ulcer and soaking it in Carbolic Lotion.

URETER (Surgery of). *A. W. Mayo Robson, F.R.C.S.*

Although the ureter may be attacked by the surgeon through the bladder in both sexes and through the vagina in the female, in the greater part of its course it has to be reached through an abdominal incision either in the loin or flank.

Surgical treatment of the ureter is chiefly required for impacted calculus. In a paper read before the Midland Medical Society, Nov. 25th, Mr. J. W. Taylor related two cases. In each instance he had diagnosed the condition from the presence of a little painful tumour felt on vaginal examination in the situation of one ureter near its entrance into the bladder. In one of the cases the stone had passed, with disappearance of the local tumour, and the calculus from this case was shown. In the other case the tumour persisted.

Dr. A. T. Cabot, in the "American Journal of Medical Sciences," publishes some important observations on the anatomy and surgery of the ureter. The ureter for the last two, or even in some cases three, inches of its course runs in the broad ligament in close relation to the upper part of the vault of the vagina, where it can be reached and incised without danger of opening the peritoneum.

The incision for reaching a stone lying above the vault of the vagina should be outward and backward, in order to keep it within the layers of the broad ligament. After the vaginal wall is divided the finger pushes up readily into the broad ligament, and the tissues can be pressed aside until the stone is reached.

If the incision is made through the ureter on its under side, the danger of injuring the peritoneum must be slight.

That the removal of a stone above the vault of the vagina is feasible by vaginal incision, a case of Dr. Cabot's will show. He describes the operation as follows: The patient was etherised for operation. An incision was made over the calculus through the vault of the vagina just to the left of the cervix uteri. The calculus was easily reached, the grating of the knife upon it being distinctly felt during the first incision. After the end which presented had been thoroughly uncovered,

it was found that the rest of the calculus was so tightly grasped by the tissues above that it could not be easily extracted. In fact, the presenting end broke to pieces under the grasp of the forceps with which extraction was being attempted. After trying many manipulations in vain, a blunt hook was passed up alongside of the calculus into the ureter behind, then turned and hooked over the upper end, and traction with this, aided with the finger pressing the tissues aside, finally accomplished the removal of the stone. The moment it came out there was a rush of pus from above. This pus was of ordinary thickness, apparently not much thinned by urine. Probably from ten to twelve ounces escaped. A rubber tube was introduced into the ureter through the opening made. After the pus had fully escaped the tumour in the abdomen was found to have disappeared. The patient made a good recovery, and the urine, which was very scanty just after the operation, gradually increased in quantity until it became sufficiently abundant. Drainage through the fistula was kept up for some time, and finally, when the drainage-tube was removed, there seemed to be no tendency for the opening to close, there being a constant moderate discharge of pus through it. She recovered strength slowly, as is usual in those cases where the kidneys are seriously involved. She left the hospital on the 25th of July. She continued to gain strength after getting home, and finally was able to be about as usual, doing her ordinary work. This patient was last heard from in November, 1890, and at that time there was still an opening in the vagina, discharging a small amount of pus. No urine ever came through the fistula, showing that the long distension of the kidney had destroyed its excreting functions.

Dr. R. Harvey Reed has performed a number of experiments on dogs to show the possibility of implanting the ureters into the rectum in order to divert the course of the urine. His conclusions are :—

(1,) That the unilateral implantation of the ureter into the rectum is a possible and practical surgical procedure.

(2,) That the bilateral implantations of the vasa deferentia into the rectum is not followed by any serious or detrimental results, further than rendering the dog sterile.

(3,) That the simultaneous implantation of both ureters into the rectum is still a questionable surgical procedure, as shown by the experiments made thus far on the dog, and also by Küster's double implantation of the ureters in man.

(4,) That the presence of the urine with the fæces in the rectum does not produce pathological irritation of the latter, but that the rectum will readily accommodate itself to its presence.

(5,) That the passing of frequent liquid stools cannot be depended upon as resulting from implantation of the ureters into the rectum, and the presence of urine in that receptacle.

(6.) That these experiments have suggested the probability of a portion of the water of the urine, being absorbed by the rectum, leaving the salts, etc., of the same to be eliminated from the economy with the fæces.

(7,) That the ligation of one ureter, and the consequent production of hydronephrosis, is not necessarily followed by inflammation and destruction of the wall of the ureter or the substance of the kidney, and suggests one of two things: either the arrest of the secreting powers of the kidneys, or the reversal of the natural physiological process of elimination, for those of absorption.

The observations seem to show the utility of uretral implantation where one of the ureters is accidentally or unavoidably injured in any abdominal operation as ovariotomy, or as to avoid the serious alternative of nephrectomy. They also go to prove that bilateral implantation may be possible if one ureter only be implanted at once, and should this be found feasible, the hitherto impracticable operation of cystectomy may be possible.

Dr. H. Gifford Nash[1] draws attention to a specimen in St. Bartholomew's Hospital Museum, which he believes shows that gonorrhœa may give rise to stricture of the ureters and thus lead to hydronephrosis. The following is a description of the specimen: The kidneys are enlarged and sacculated, and their pelves are dilated. The right ureter immediately beyond the pelvis of the kidney presents a very tight and tortuous stricture about an inch in length. The stricture is so tight that it was barely possible to inject water through it. Two inches lower down this ureter is again constricted, but the second stricture is not so narrow, and is annular in form. The left ureter is also constricted in two places about two inches apart. The upper stricture is situated two inches from the kidney, and the ureter above it is dilated into a pouch. The strictures will admit of the passage of a No. 7 catheter. All the strictures are tough and fibrous, and appear to be of long standing. The bladder is much hypertrophied. From a man, aged forty-four, upon whom urethrotomy was performed for the relief of an impassable stricture of the urethra.

A Third Ureter.—Baum[2] read a case last year before the Upper Silesian Medical Society where two right ureters existed in a virgin. The anomalous ureter opened separately outside and below the normal duct, and so close to the ureter that the patient suffered from incontinence of urine. Baum opened the bladder above the pubes and made

an aperture in the base of that organ, over a point where the anomalous ureter was dilated. The dilatation was laid open and kept open by suture. The remainder of the anomalous duct immediately below the dilatation was closed by a ligature. The patient was cured, but a hernia developed at the seat of the abdominal cicatrix. Baum recommends operation from the vagina in future cases of the same kind. It was only on account of the patient being a virgin that he operated from the bladder in this case.

REFERENCES.—[1] "Brit. Med. Jour.," May 7, 1892; [2] "Centrabl. f. Gynäk.," No. 17, 1892.

URETHRA (Diseases of). *E. Hurry Fenwick, F.R.C.S.*

Resection and Suture of Urethra.—Jouon,[1] of Nantes, reports a case of rupture of the urethra followed by urinary abscess and considerable induration of the tissues, which he treated successfully by resection and suture. The resected segment measured ten millimètres at the upper and eighteen millimètres at the lower part. The cut surfaces were brought together with nine fine catgut sutures. The immediate results of the operation were perfect, and Jouon thinks that the method should be applied to all undilatable strictures, whatever their origin. Quénu[2] has resected the urethra in one case with indifferent success. The patient was a horseman who had sustained a traumatic rupture of his urethra, and during a period of ten years had undergone internal urethrotomy five times and dilatation on several occasions. The man was in a wretched state, the urine being purulent and ammoniacal, and the bladder the seat of infective lesions. Resection of the strictured portion of the urethra was performed, one centimètre and a-half being excised. A fistula was left, however, and the condition of the urine was but little improved, and Quénu thinks it probable that this was the cause of the failure of the operation. In any future similar case he proposes to prevent the infection of the operation wound by the urine by first making a provisional buttonhole opening in the membranous portion of the urethra. Desprès[3] points out that resection of the urethra is not a new operation, having been practised by Bourguet, of Aix. He thinks suture unnecessary after resection, as healing takes place by granulation if a catheter is tied in. In this way he cured a patient with a strictured and fistulous urethra, two centimètres of which he resected. The fistula left by the operation closed spontaneously in a few months.

The Distensibility of Infantile Urethra.—From experiment on the dead subject, Popoff has determined the distensibility of the urethra of infants, viz., up to No. 14 for children of one month, 16 for children of one year, and 18 for children of two years.

The chief obstacle of lithotrity is said to be narrowness of prostatic urethra, which statement is decidedly opposed by Dr. Ebermann (among others) who, whilst performing median lithotomy in young children, could easily pass into the bladder his rather thick fore-finger.

Urethral Dilators.—Lawrie,[4] of Hyderabad, introduces a new form of urethral dilator, which is a modification of Voillemier's dilator, and is made by Messrs. Arnold & Sons. It is claimed that by this instrument the stricture is nicked all round as if by a very fine knife. It is inapplicable to strictures which will not not admit a No. 3.

REFERENCES.—[1] Jouon, "Sem. Méd.," May 14, 1892; [2] Quénu, "Sem. Méd.," May 11, 1892; [3] Desprès, Ibid.; "Brit. Med. Jour.," May 21, 1892; [4] Lawrie, "Lancet," April 9, 1892.

URINE. *Robert Saundby, M.D., F.R.C.P.*

New Albumen Reagents.—E. Spiegler[1] recommends a solution of **Mercuric Chloride**, 8 parts; **Tartaric Acid**, 4 parts; **Sugar**, 20 parts; **Water**, 200 parts. The presence of albumen is shown by a cloud at the junction of the layers of fluid. Alkaline urine, or that which contains much mucin should be acidulated with acetic acid. It is said to detect 1 in 50,000 parts of egg albumen; it gives no reaction with peptone, but possibly does so with albumose. The sugar is added to increase the density of the fluid, and so prevent it from mixing with the urine.

A. Jaworowski proposes one which he says detects 1 in 300,000 parts of albumen. It is prepared as follows: 1 part of **Molybdenate of Ammonium** is heated with 40 parts of **Water**, and afterwards mixed with 5 parts of **Tartaric Acid**, when, if it is not clear, the fluid must be filtered. The urine must be transparent and acid; if not acid, tartaric acid must be added. The albumen is dissolved in excess.

Piperazine for Uric Acid Dyscrasia.—The good effects of **Piperazine** in the treatment of the uric acid dyscrasia is attested by C. Mordhurst, who used it in doses of 15 to 30 grains daily in five cases of gout. It caused a marked diminution in the amount of crystallized urates, but he does not consider it superior to the ordinary alkaline waters of Ems, Vichy and Carlsbad, and inferior to those of Wiesbaden. Yet its use was never followed by any untoward effects, and diuresis was very marked.

Dr. Herget has used it in combination with **Phenocoll**, 15 grains of each daily dissolved in a pint of soda water. It increased the elimination of uric acid, and relieved the pain and stiffness of the joints in a severe case of gout.

Dr. Volmer also corroborates the beneficial effects of the drug in

doses of from 8 to 15 grains daily. He found it of great use in an obstinate case of renal colic.

Prof. Schweninger has treated over one hundred and fifty cases of gout with this remedy, and considers piperazine to be an enormously valuable addition to our store of remedies. He has used it locally by subcutaneous injection to dissolve gouty concretions, 1½ grains in 10 per cent. watery solution; the injections were made two or three times daily. He has also found it excellent in renal colic.

The diuretic action of Copaiba Balsam, Copaiba Resin, Milk Sugar, and Diuretin in Children.—Dr. Alexander A. Kisel,[2] of Moscow, has undertaken an investigation of the following drugs in children :—

Drugs.	No. of Experiments.	Increase.	Decrease.	Negative.
Milk Sugar ...	23 ...	9 ...	6 ...	8
Copaiba Resin ...	7	No diuretic action.		
Copaiba Balsam, not given		... 3 ...	2 ...	2
Diuretin ...	6 ...	2 ...	0 ...	0

Dr. Svetükhin has found in his researches that **Copaiba Balsam** is a very powerful diuretic.

Vespa[3] has found **Milk Sugar** a valuable diuretic in heart disease and pleuritic effusion.

REFERENCES.—[1] "Wiener. klin. Woch.," 1892, No. 1; [2] "Meditz. Obozrenië," 1892, p. 382; "Vratch, 1891, No. 35; [3] "Riforma Med.," Nov., 1891.

URINE (Incontinence of, in Women). *Wm. J. Smyly, M.D., F.R.C.P. John H. Glenn, M.D., B. Ch.*

Dr. W. S. Bagot, late senior assistant physician to the Rotunda Hospital, Dublin, contributes an article to the "Dublin Medical Journal," in which he strongly recommends the use of **Massage** in the treatment of this affection. After alluding to the opposition which has been offered to the practice of massage, in connection with gynæcology in this country, he states the method successfully adopted by Thure Brandt :—

(1,) *Tapotement of the lumbar and sacral regions.* The patient stands with the feet together, leaning slightly forward and supporting herself by placing her outstretched hands against a wall or other firm object. A rapid but springy percussion is then made with the closed fist down both sides of the spine, beginning at the lumbar region and passing downwards over the buttocks, after which the open hand is stroked firmly downwards over the same regions three or four times.

(2,) The patient lies on a low couch as in the dorsal position for vaginal examination. The operator stands in front of the patient, with his right foot on the ground and his left knee on the couch; then bending over the patient, he extends his arms and lays his hands,

with the ulnar surface approximated, and the finger-tips directed towards the pubes, on the woman's abdomen in the hypogastrium. Now, sinking his fingers deeply into that region by the sides of the bladder as if to grasp it, he makes a vibratory movement with each hand alternately, as though he were about to elevate that viscus out of the pelvis. This is repeated three times.

(3,) The index finger of the left hand is introduced into the vagina, slightly flexed and passed obliquely so as to partially encircle the neck of the bladder. The right hand now grasps the wrist so as to more accurately regulate the pressure used, and the finger in the vagina is made to vibrate against the neck of the bladder, compressing it moderately forcibly against the pubes. This being done three or four times, the opposite side of the bladder is treated in a similar manner with the index finger of the right hand.

(4,) *The exercise of the adductors of the thigh.* The patient, still lying on her back, brings her knees and heels closely together, and raising her pelvis off the couch, supports herself on her shoulders and feet. The operator then places his hands on the inner surfaces of her knees and gradually forces them apart as far as possible, while she resists the movement. She now closes them while he resists. This is done four or five times, after which the tapotement of the lumbar and sacral regions is again performed. In children the neck of the bladder is treated as in step 3, but per rectum instead of per vaginam.

Both Brandt and Boldt have reported numerous successful cases treated by this method. A lady, who had been treated by "some of the most eminent German specialists" by dilatation of the urethra, electricity, etc., aged thirty-two years, married nine years, came to Brandt stating that for the past six years she was utterly unable to retain her water the moment she was on her feet. After eight days' treatment she was discharged cured. Boldt also reports successes in the cases of two children, aged nine years, after treatment lasting three weeks. The author considers that the chief part of this method, as applied to the cure of incontinence of urine, is the direct treatment of the neck of the bladder.

There is another method of treatment for this affection to which he directs attention. The patient lies in the dorsal position as for vaginal examination. The urethra is disinfected, and a metal female catheter is passed into the bladder for a distance varying from 5—7 cm., so that its point is on a level with the orifices of the ureters. The tip of the right index finger being kept on the mouth of the catheter prevents the urine from flowing off, while the index and middle fingers

of the same hand steady the instrument. Now, with the index and middle fingers of the left hand placed upon the catheter close to the urethral orifice, the operator makes a springy and forcible pressure, at first downwards and then towards both sides alternately, so that the urethra becomes during these movements widely open and the urine flows out alongside the catheter. Thus not only the sphincter of the bladder, but also the muscularis of the urethra becomes strongly stretched. Further massage of the parts can also be performed by a finger in the vagina or rectum exerting pressure against the catheter.

In children a small sound can be used instead of a catheter. The stretchings are not very painful, but in very sensitive people the urethra can be brushed beforehand with a 10 per cent. solution of cocaine. More than ten or twelve *séances* are rarely necessary—at first twice a day, and afterwards once every second day. Eight or twelve stretchings are made, in the three directions at each sitting. The patient is directed to exercise control over the sphincter, to abstain from fluids and keep the abdomen warm.

Synopsis.—(Vol. 1892, p. 505.) **Galvanism. Extractum fl. Rhus Aromat.**, 5 to 15 drops night and morning in milk. **Strychnine Nitrate**, 1 milligramme daily hypodermically.

URTICARIA.

Synopsis.—(Vol. 1892, p. 506.) Quinquand gives **Quinia**, 5 to 10 gr. doses in intermittent forms, and **Liq. Arsenicalis** may be added. In chronic forms baths and hydropathy are forbidden. **Wrapping in Cotton Wool** often does good, and internally **Alkalies, Arseniate of Soda**, and **Naphthol** are indicated. Locally, bathe the patient in R Aq. Lauro-Cerasi, 50 parts; Chloral Hydratis, 5 parts; Aqua, 200 parts; M.: or Ether, ʒj; Tepid Water, ʒij: or Sp. Camphor, ʒj; Chloroform Water, ʒix: or powder the skin with R Amyli 50, Zinc Oxidi 10, Ac. Salicyl. 5 parts; M. If **Sodium Salicylate, Atropine, Quinine** and **Strophanthus** fail, Stern advises **Potassium Iodide**. Locally, 1 part of **Water** to 2 parts of **Vinegar**.

UTERINE PROLAPSE. *Otto Holst, M.R.C.S.*

I venture to call the attention of the British medical profession to a new operative treatment of this affection, devised by a Swedish surgeon, Dr. F. Westermark, which he describes in the medical journal of that country, the "Hygiea," Sept., 1892. He does not pick his cases, or rather he takes the very worst cases which have resisted other treatment, even the operative treatment now in common use, *i.e.*, anterior or posterior colporrhaphy, or excision of the cervix. Of such cases he has treated twenty-two with good and *permanent* results, requiring no subsequent employment of any pessary whatsoever. His method of operation is as follows:—

The patient being under the influence of an anæsthetic, and in the

lithotomy position (*Fig.* 68), any hypertrophy or ulceration of the cervical lips are cut away, first the anterior and then the posterior. The bleeding is stopped with deep sutures, which are left long for subsequent use. The wounds in the lateral fornices caused by the excision remain open for the present. Should a cystocele be present, an elliptical piece of the anti-vaginal wall (not only the mucous membrane), extending from the anterior lip of the portio-vaginalis to within one centimètre from the urethral opening, is dissected up, and the wound closed by deep and superficial sutures.

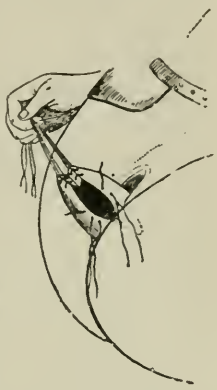


Fig. 68.

If now by means of the long sutures left in the cervix the prolapsed uterus is drawn to the right side, the left lateral attachment of the vagina to the para-cervical and para-vaginal connective tissue becomes well marked. An incision is then made along the anterior fold thus made apparent, beginning from the anterior end of the wound left open in the cervix, and extending straight down the side of the vagina to within about three centimètres of the vaginal opening ; parallel with this, and one to one and a half centimètres behind, another incision is made from the posterior end of the cervical wound. These incisions meet below at an acute angle. The intervening piece of the vaginal wall is dissected up, so that the subjacent connective tissue lies exposed. The bleeding is stopped, and deep sutures are inserted, but not tied.

The uterus is now drawn over to the left side, and the same performance repeated ; the womb is then pushed up, and the sutures on either side tied. If the perineum be imperfect, a perineorrhaphy, according to the principles laid down by Tait, is performed. The novelty in this method of treatment lies in the operation of colporrhaphy being *lateral.*

His reason for this modification of operating is, that it is the strong connective tissue in the broad ligaments which keeps the vagina *in situ*—even when the perineum is imperfect—and not the connective tissue found between it and the bladder, and the rectum, posteriorly.

That this view is correct is shown by the fact that prolapse of the anterior and posterior vaginal walls occurs without corresponding prolapse of the bladder or rectum, as the case may be ; this is no doubt due to the loose and lax condition of the connective tissue found in these situations.

He compares the relation between the uterus and the vagina to a funnel hanging down the neck of a bottle, and contends that the uterine ligaments, *e.g.*, the upper part of the broad ligaments, the round ligaments, and the sacro-uterine ligaments, being too feeble to keep the uterus in position, it is the lower part of the broad ligaments and their strong connective tissue which keeps it *in situ*.

UTERINE THERAPEUTICS.

Wm. J. Smyly, M.D., F.R.C.P.
John H. Glenn, M.D., B. Ch.

Euphorin.—L. M. Bossi[1] reports the results of some clinical experiments with **Euphorin** made by him in obstetric and gynæcological cases. He employed it in powder in twenty cases of ruptured perineum, and found that it promoted rapid healing both in slight cases and in more severe lacerations where sutures had been required. He also used it as a dressing to the stump of the umbilical cord in twenty-one newborn babes. In no case did suppuration take place, nor was there any sign of the drug having been absorbed. In none of the cases was there any appearance of icterus neonatorum. In twenty-nine gynæcological cases euphorin was employed as a fine powder, applied by means of a special atomiser (vaginitis, ulcerations of the os, cervicitis with abrasions of the portio vaginalis and parenchymatous cervico-metritis) or small pessaries about 4 centimètres in length and containing 40 to 50 per cent. of euphorin, which were introduced every two or three days in the uterine cavity (in cases of acute and chronic endometritis). In both these classes of cases the results of the treatment were satisfactory, and Bossi concludes by saying that his experience leads him to think that euphorin acts both more efficaciously and more rapidly than any other substance hitherto in use, not excepting iodoform.

Bergerio[2] has tried the effect of topical applications of euphorin in twenty cases of ulcerative cervicitis, in four of which the condition was complicated by eversion of the mucous lining of the cervix; after five or six applications the lesions were on the way to cure. He also employed the drug in powder by insufflation, and in a 1 in 3 alcoholic solution, and in this way cured some cases of septic endometritis. In order to avoid confusion, no other disinfecting agent was used at the same time, all washings out of the genital canal being performed with sterilized water.

Ichthyol.—Reitman and Schönauer[3] experimented with **Ichthyol** in acute and chronic inflammatory diseases of the uterus and appendages and are quite satisfied with its efficacy. They tried it with success in parametritis, pelveo-peritonitis, oöphoritis, salpingitis, perioöphoritis, perisalpingitis, as well as in retro-uterine and peri-uterine exudations,

chronic metritis and cervical erosions. The following formula was used :—

℞ Ammon. Sulpho. Icthyol.	āā ʒijss	Glycerini	ʒiij

For external application.

Oxygen Inhalations.—Rivière[4] has found, as the result of much experience, that inhalations of **Oxygen** are of value under many circumstances, both for mother and child. Thus inhalation is serviceable in counteracting the evil effects of chronic or acute thoracic diseases during pregnancy, which so often cause abortion or premature delivery. In uncontrollable vomiting and anorexia, inhalations are also useful. After delivery inhalations superoxidise the blood, which appears to enable that fluid to resist sepsis. When a pregnant woman is ill or weak, inhalations always profit the fœtus, whose nutrition is thereby improved. Rivière goes so far as to contend that the method is of service in placental disease, or even in partial detachment of the placenta ; it allows, he believes, more complete oxidation of the fœtal blood in the diminished area of sound placenta that remains. Altogether, however, he admits that inhalations are of more certain benefit for new-born children, whether they be emaciated from some cause which existed before birth, or continue to be thin for some period after delivery, owing to malnutrition.

M. Rivière details the following conditions as indicating the use of inhalations of oxygen :—

(1,) *In the pregnant woman.*—To overcome threatened asphyxia consequent on pulmonary or cardiac disease. Whenever nutrition is impaired or enfeebled through persistent vomiting which interferes with digestion.

(2,) *In child-bed.*—To strengthen the patient and enable her more efficiently to contend against the invasion of septic microbes.

(3.) *In the pregnant woman, but to act on the fœtus.*—Whenever there is reason either from a parallel or other condition in the mother to suspect that the fœtal blood is insufficiently oxygenated. In placental lesions which might produce a similar effect on the fœtal blood.

(4,) *In the new-born.*—In cases of atelectasis, and whenever either from premature birth or prolonged labour, the respiratory function is impaired.

(5,) *In older children.*—When evidence of rickety mischief makes its appearance.

Morphine (*Effect on Milk during Lactation*).—Tarnier and Chantreuil having obtained contradictory results upon animals, Pinzani[5] experi-

mented upon nursing women, and concludes that **Morphine** taken in therapeutic doses does not pass into the milk in the state of morphine, or if it does pass, it is in such small quantity that it will not cause functional trouble in the infant.

Antipyrin (*Effect on Milk during Lactation*).—The author has noticed gastro-intestinal trouble in infants where the mothers have been taking **Antipyrin.** Pinzani recalls the opinion of Roncaglia that antipyrin administered to a nursing woman is not injurious to the infant, and the opinion of Tenin, who found traces in the milk, but with difficulty. Finally, Ross thought that antipyrin diminished the secretion of milk. From these experiences Pinzani concludes that antipyrin passes in minute quantities into the milk, whose secretion is not thereby diminished.

REFERENCES.—[1] "Rif. Med.," Dec. 15, 1891; [2] "Gazz. d. Osp.," April 7, 1892; [3] "Zeitschrift fur Therapie"; [4] "Nouv. Arch. d'Obstet. et de Gynéc.," April 25, 1892, "Gaz. Hebdom. des Sciences des Médicales de Bordeaux"; [5] "Ann. di genie e Ostetric.," Milano.

VAGINITIS of Children). *Henry Dwight Chapin, M.D., New York.*

Dr. Comby concludes that the vaginitis of children is almost without exception due to the gonococcus, although generally not due to criminal practices. Lotions of **Bichloride of Mercury,** 1 to 2000, and of **Boric Acid,** 4 per cent., are ordered three or four times a day, followed by applications of powdered **Salol. Sulphur Baths** are given three or four times a week. Suppositories may be introduced into the vagina, containing 1½ grains of salol to 15 grains of cocoa-butter, two or three times a day.

REFERENCE.—"Rev. Mens. des Mal. de l'Enf.," Jan., 1892.

VARICOSE VEINS. *Professor F. Trendelenburg, M.D., Bonn.*

Ligature of the Trunk of the Vena Saphena Major in Varices of the Leg.—Ligature of the trunk of the saphenous vein for the purpose of reducing varices of the leg and healing varicose ulcers of the leg is suitable for those cases in which not only the branches but also the trunk of the saphena have undergone varicose degeneration.

The vena cava, vena iliaca, and the trunk of the vena femoralis immediately below Poupart's ligament have, with rare exceptions, as is well known, no valves. The vena saphena is possessed of valves, but these are incapable of occluding the lumen when the vein has become abnormally distended. Therefore, when the trunk of the saphena has become varicose as well as the branches, the vena cava, vena iliaca, the upper portion of the vena femoralis and the saphena with its branches represent one wide system of communicating tubes, not occluded by any valvular apparatus, and in which the fluid con

tents are regulated as regards their movements, chiefly by the laws of gravitation.

This may be easily demonstrated in the following manner: If the patient is placed in a horizontal position, and the leg be then raised from the couch, the varices are emptied, and this with increasing rapidity the higher the leg is elevated above the level of the heart. By raising it to a vertical position, all blood is made to flow rapidly away, and the pressure of the air pushes the thinned integument over the varices, together with the thin wall of these latter right into the lumen of the vein. Where, on the patient assuming the erect position, an agglomeration of thick, contorted projections appeared, there we now see a system of indentations exactly corresponding to the former in shape, and comparable to the dried up bed of a river.

In addition to the influence of gravitation in this experiment, the pressure in the abdominal cavity also acts upon the column of blood in the saphena. The distended saphena forms, during the assumption of the supine position by the patient and moderate elevation of the leg, as it were, a manometer attached to the abdominal cavity. If the patient coughs or presses, the column of blood in the saphena rises, and even mere percussion of the abdominal walls with one's finger will produce a slight fluctuation of the level of the fluid in the saphena.

If the patient now rises from the couch, the entire canal immediately becomes full and distended by the blood which flows back again from the iliac vein.

The fact that we have here to do with a reflux of blood from the vena iliaca, and not a filling of the varices from the capillaries, may readily be proved by the following experiment: The patient being again placed in a horizontal position, the leg is raised perpendicularly and thus retained until all blood is ejected from the territory of the saphena, whereupon the trunk of the vein is occluded by digital compression at any spot where it is easily recognized. Now the patient is allowed to descend cautiously from the couch without the compressing finger leaving its position. It is seen that the whole territory of the saphenous stream at first remains perfectly empty (*Vide Plate VII, Figs. A, B.*) Not before the end of a quarter or half a minute are the varices seen to begin to gradually fill with blood. As long as the compression of the saphena lasts, however, the distention is nothing like what it was before. Only on removing the finger a more considerable quantity of blood rushes into the varices from above, and the old appearance of the varices tensely filled with blood is again restored.

In this experiment, the condition of the smallest and scarcely visible venous ramifications in the skin of the leg on the inner malleolus and the dorsal surface of the foot is the same as that of the larger veins. As long as the digital compression continues, the delicate arborescent markings of the smallest ectasic and crimson-coloured cutaneous veins have almost disappeared, but as soon as the compression ceases the markings are suddenly reproduced ; as long as compression continues the skin remains somewhat pale, but as soon as compression ceases it regains its usual livid colour.

If in a case in which the experiment here described has proved the insufficiency of all the valves of the saphena the trunk of this vein is ligatured in its course over the thigh, we have produced permanently the same condition which was temporarily achieved by digital compression. The return flow of the blood from the vena iliaca into the varices is prevented, the varices receive blood from the capillaries only, and the blood in the varices is no longer submitted to the pressure of the weight of a column of blood measuring in the upright position of the patient about one mètre. In consequence, the varices are not nearly so full as before ; the blood from the capillaries flows through the communicating branches into the deeper veins of the leg. The smallest veins of the skin also, and those in the base of a varicose ulcer (which may perhaps have already formed on the ankle) are relieved of the comparatively enormous pressure of that high column of blood. The ulcer may thus be expected to heal more rapidly, and also to exhibit a decreased disposition to relapse, for recurrence is very often due not to external injury of the cicatrix, but to small venous hæmorrhagic extravasations in the same.

The correctness of these theoretical deductions has been practically proved by a great number of cases which have been operated upon.

Even in the very worst cases of intense varicose degeneration in which a small but very sensitive ulcer, hard to cure and prompt to relapse, has formed on the internal malleolus, ligature of the trunk of the saphenous vein yields excellent results. The sore heals with surprising celerity. When the wound caused by the operation has healed, the varices are only incompletely filled on standing, their walls gain time to retract more and more, and the patients are soon able to attend to their avocations without the aid of bandages or elastic stockings. In cases where formerly considerable œdema of the lower extremities was observed of an evening, this no longer takes place. I was able to investigate some cases of this kind for two years and longer, and I have convinced myself that the favourable

PLATE VII.

Fig. A.

Fig. B.

result obtained was permanent, and above all that relapse of the ulcerations did not ensue.

Likewise in larger ulcerations above the ankle, when due plainly to the presence of varices, healing is considerably more rapid after the operation than without it. Relapses are, however, more frequent in such cases, because the extensive cicatricial surface is more exposed to mechanical injuries.

If the formation of varices is still in the initial stage in young persons, the operation is not exactly to be recommended. In one case of this kind it was followed by persistent œdema, probably on account of the communication of the varicose veins with the more deeply-situated veins of the leg not being sufficiently developed.

The technique of the operation is very simple. As after mere ligation of the trunk without severing it the occluded lumen of the vein can be restored in course of time, it is better to proceed as follows : Lay bare the vein by an incision about two centimètres long, tie it up with two catgut ligatures, and cut it through between the two ligated points. Before tying the ligatures, the leg is well elevated in order to allow all blood to flow away. The skin wound is sutured. After an antiseptic dressing has been applied, the whole leg is carefully enveloped with a flannel roller and placed in a slightly raised position. The roller must fit well, and should be renewed every few days. If it cause constriction at any part, a circumscribed thrombosis of that portion of the varices may be the result. Thromboses of larger dimensions are never found to arise when the wound heals aseptically, certainly not above the point of ligation, which would indeed be possibly productive of a dangerous embolism of the lungs. When the patient leaves his bed in two or three weeks, occasionally at first some slight œdema of the foot is noticed, but as a rule this soon disappears entirely.

As regards the place of ligature, it is generally best to select the boundary between the middle and lower third of the thigh, or a spot a little lower down. If, instead of the region of the saphena major that of the saphena minor is found to have undergone varicose degeneration, and the compression test shows the trunk of this vein to have lost its normal occlusion by means of the valves (in which case the minor saphena generally goes into the major) then the trunk of the lesser saphenous vein should be selected for ligation. In rare cases, it may be stated in conclusion, both trunks, or even other communicating branches, will have to be tied in order to ensure success.

REFERENCE.—Bruns, "Beiträge zur klinischen Chirurgie," vii., p. 195, ss.

VERRUCA.

Synopsis—(Vol. 1892, p. 517.) Payne advises **Collodion of Salicylic Acid.** A light caustic such as **Acetic Acid** applied frequently is better than one application of a very strong one. Kaposi applies 1 part Perchloride of Mercury in 30 of **Flexible Collodion** daily. Müller and Pullin found warts disappear under **Arsenic** given internally. Rœmer says the **Verbascum Phlomoides** and **V. Thaspus Flowers** freshly torn and well rubbed into the wart effect a cure.

VERTIGO. *Græme M. Hammond, M.D., New York.*

Dr. Edwin R. Maxson,[1] in an exhaustive article upon this subject, describes several forms of well-recognized vertigo.

Gastric Vertigo is very common, and may generally be recognized, depending, as it does, upon various forms of indigestion. It can be usually overcome by a strict regulation of the diet and the cultivation of habits which favour proper digestion. Tonics to aid digestion may be required, and, in some rare instances, counter-irritants.

Nervous Vertigo usually attends nervous exhaustion, and generally is, or may be caused by anxiety, sexual excesses, tobacco, and tea or coffee. The treatment consists in the removal of the cause, the insistence of regular hours for sleep, and the substitution of hot water for tea or coffee in many instances.

Epileptic Vertigo may occur in a fit of epilepsy, or may even take the place of it; quite frequently preceding it. The treatment consists in regulating all the habits, and administering blood and nerve tonics, the most effectual of which, according to his experience, were **Oxide of Zinc, Carbonate of Iron,** and **Rhubarb,** 2 grains of each for an adult, three times a day.

Migrainous Vertigo either attends or follows the development of headache, or even sometimes replaces it. A regulated diet, tonics, and an occasional dose of **Magnesia** when the vertigo is an approaching symptom, are recommended. Correction of imperfect ocular action should be attended to, if necessary.

Gouty Vertigo occasionally occurs in gouty persons, disappearing, perhaps, when there is the supervention of gouty arthritis. For this affection the author recommends **Colchicum, Guaiacum,** and **Iodide of Potassium,** and moderation in eating and drinking.

Brain and Spinal Vertigo, of an organic character, may arise from tumours, sclerosis, or other changes in the brain, cerebellum and spinal cord. The author recommends a regulated diet and full doses of iodide of potassium, wet cups to the back of the neck, blisters behind the ears and later to the back of the neck, should be persevered in to the last. **Mercury,** about $\frac{1}{12}$ of a grain of the bichloride in solution with about 8 grains of iodide of potassium, often acts favourably.

Ocular Vertigo depends upon paralysis or weakness of one or more of the recti muscles. Suitable treatment should be directed to whatever defect there may be in the eye, its muscles, or appendages. Cups to the back of the neck, and blisters behind the ears and to the temples, electricity, and possibly the adjustment of glasses, may be required.

Aural Vertigo, or Menière's disease, is caused by disease of the labyrinth directly, as congestion, inflammation, or "hæmorrhage"; or indirectly by disease of the Eustachian tube, and of the middle ear, spasms of the tensor tympani, paralysis of the stapedius, irritation or obstruction of the external meatus, and pressure upon the membrana tympani. On this affection there is more or less secondary visceral disturbance, such as pallor, faintness, nausea and vomiting, syncope, etc.

The indications in the treatment of aural vertigo (Menière's disease), in which the labyrinthine affection is not primary, depending upon disease of the tympanum or external meatus, or obstruction of the Eustachian tube, should be adapted to the condition in each particular case.

It may involve cups or blisters to the back of the neck, leeches or blisters behind the ears and to the temples, syringing the external meatus to remove wax, or using the Eustachian catheter to clear that tube; and possibly the dropping into the external meatus a solution of 20 grains of **Boric Acid** to the ounce of equal parts of **Glycerin** and **Water** daily for catarrh of the meatus, and **Electricity** for paralysis of the stapedius muscle.

The treatment of *primary* labyrinthine disease includes several indications. Cups should be applied early to the back of the neck, and repeated, if necessary; and at first leeches to the mastoid process and temples. Later, blisters may be substituted and repeated, if necessary, while the vertigo, nausea, or vomiting remains. The ammoniated **Citrate of Bismuth** in 1 grain or 2 grain doses, may be given three times a day, to allay sympathetic gastric derangement. And, to favour digestion, 2 drops of the tincture of **Nux Vomica** may be required.

In anæmic, congestive, or malarial cases, 2 or 3 grains (*not more*) of **Cinchonidine** may be required every six hours, alternating with the bismuth and nux vomica, and possibly **Bromide of Potassium** at night.

The feet should be set in warm water daily, and magnesia may be given each morning to avoid constipation and as an antacid; and if the tongue is coated, an improved cathartic or leptandrin pill at night till it becomes clean.

REFERENCE.—[1] "New York Med. Journ.," Jan. 23, 1892.

Synopsis.—(Vol 1892, p. 518.) Gray attributes vertigo to gastric causes, and in non-neurasthenic cases begins with **Nitro-Muriatic Acid Dil.**, 20 drops before meals in a wineglassful of water, and **Cascara Sagrada**, 5j **Fluid Extract**, or 2 grs. of **Solid Extract** thrice daily. After ten days he gives instead of the acid **Pepsin** directly after meals, and **Pancreatin** an hour-and-a-half afterwards. He interdicts red meat in the first part of the treatment only. In neurasthenic cases the same treatment is used with the addition of **Rest**, and, if necessary, two or three weeks must be spent in bed.

VITREOUS (Opacities of). *William Lang, F.R.C.S.*

In idiopathic vitreous hæmorrhages, Dr. Spalding advocates the internal administration of **Jaborandi.** Dr. Shweintz confirms the good results obtained by the treatment, which should not be pushed so far as to produce the full physiological effect; both are convinced that this is disadvantageous. The small doses they recommend—10 minims of the liquid extract of jaborandi three times a day—increase the quantity of urine passed in the twenty-four hours, but otherwise do not appear to effect anything beyond clearing the vitreous.

VOMITING (Treatment of). *Frank J. Wethered, M.D.*

Dr. Albrieviez for various kinds of vomiting recommends the use of **Hydrochloric Acid,** well diluted, in small and frequent doses. In one case of the vomiting of pregnancy, where none of the ordinary remedies had any effect, hydrochloric acid proved successful, though it had to be given for a fortnight before it entirely arrested the sickness. In more than ten cases of cholera nostras in adults, with vomiting, hydrochloric acid was given with good results. Again, where vomiting was due to acute dyspepsia from errors in diet, and where it occurred in the course of influenza, scarlet fever, or other contagious diseases, the same remedy proved equally efficacious.

REFERENCE.—"Lancet," May 7, 1892.

WORMS.

Synopsis—(Vol. 1892, p. 33.) Parisi found the **Milk** and **Pulp** of **One Cocoa Nut** taken fasting in the morning was always successful in expelling tænia. No cathartic or dieting was required.

XANTHOMA DIABETICORUM. *T. Colcott Fox, M.B.*

Malcolm Morris, in recording another case of this affection, takes the opportunity to review the whole subject, and concludes both on clinical and histological grounds, that "the affection is fundamentally of the same nature as the other conditions which have been grouped together under the general term of 'xanthoma,' excluding the xanthoma of Balzer, which consists of a localized hypertrophy and degeneration of the elastic tissue." Of the exact relation between the diabetes and the skin lesions little is known at present.

Radcliffe Crocker also records a case, and traces the links between the advanced form of xanthoma planum, which suggests a neoplasm, made up almost entirely of giant-cells, with scarcely any signs of inflammation, and x. diabeticorum, with abundant evidence of inflammation and only a slight development of the characteristic cells. He thinks it only reasonable to infer that in spite of the neoplastic aspect of x. planum in its highest development, it is also due to an inflammatory process.

REFERENCES.—Malcolm Morris, "Brit. Jour. Dermat.," Aug., 1892; Radcliffe Crocker, idem.

YELLOW FEVER.

Synopsis.—(Vol. 1892, p. 519.) Thorington used **Cocaine** as an antiemetic very successfully. Dagnino clears intestines and stomach by an **Emetic** and **Purgative** or **Enema**. A **Stimulant Footbath** is followed by **Massage**, especially about the waist, with **Oil** and **Spirit**. **Sinapisms** are then applied, and **Acetate of Ammonia** administered in considerable doses. **Leeches** or **Venesection** may be required. **Dry Cupping** often relieves the pain about the waist. A **Quinine, Calomel** and **Rhubarb Pill** is given every two or three hours, and **Cold** or **Iced Acid Drinks**, and no food given for at least three days. For black vomit small and frequent doses of **Potassium Chlorate** with **Soda Bicarbonate**, or **Lime Water** with a minute dose of **Opium**, is valuable. **Creasote** seemed to increase the black vomit. **Antipyrin** alone, or combined with **Quinine**, is given if temperature rises to 40° C.

PART III.—MISCELLANEOUS.

Sanitary Science, 1892.

BY JOSEPH PRIESTLEY, B.A., M.D., D.P.H.,

Medical Officer of Health, Leicester.

I.—LEGISLATIVE SANITATION.

1892 has seen but few sanitary measures enacted; but to the few Acts passed attention must be drawn in so far as they have a bearing, *direct or indirect*, on Sanitary Science and Public Health.

The Merchant Shipping Act, 1892 (55 *and* 56 *Vict.*, *c.* 37), is an Act to amend the Merchant Shipping Acts, and has one important section (3), dealing with the necessity for inspecting provisions and water for crews in the case of ships trading, or going, from any port of the United Kingdom through the Suez Canal, or round the Cape of Good Hope or Cape Horn. Officers for the purpose of inspection under this Act *may* (unfortunately it does not say *must*) be appointed by the Board of Trade.

The Contagious Diseases (Animals) Act, 1892 (55 *and* 56 *Vict.*, *c.* 47), is an Act to amend, and therefore must be read with, the Contagious Diseases (Animals) Acts, 1878 to 1890. The only section calling for notice is No. 3, wherein certain provisions relating to pleuro-pneumonia in cattle are to apply to foot-and-mouth disease in any animal.

The Burgh Police (Scotland) Act, 1892 (55 *and* 56 *Vict.*, *c.* 55), is an Act for regulating the Police and Sanitary Administration of towns and populous places, and for facilitating the union of Police and Municipal Administration in burghs in Scotland. The Act applies, of course, only to Scotland, and comes into force in 1893. It is a very important Act in its sanitary bearings, and may be looked upon as a complete and efficient Public Health Act for Scotland.

The Shop Hours Act, 1892 (55 *and* 56 *Vict.*, *c.* 62), is an Act to amend the Law relating to the Employment of Young Persons in Shops, and is important from a sanitary standpoint, in that it has reference to the fact that the health of many young persons employed in shops and warehouses is being seriously injured by reason of the length of the period of employment. Section 3 states that no young person shall be employed in or about a shop for a longer period than seventy-four hours, including meal times, in any one week; and that

no young person shall, to the knowledge of his employer, be employed in or about a shop having been previously on the same day employed in any factory or workshop, as defined by the Factory and Workshop Act, 1878, for the number of hours permitted by the said Act, or for a longer period than will, together with the time during which he or she has been so previously employed, complete such number of hours.

An employer shall be liable to a fine not exceeding £1 for each young person employed in or about a shop contrary to the provisions of this Act; and by "young person" is meant a person under eighteen years of age.

Unfortunately the Act will become practically a dead letter by reason of Section 8, which makes it permissible, and not compulsory, for the Council of any County or Borough (and in the city of London for the Common Council) to appoint inspectors under this Act.

The Act came into force on September 1st, 1892, and applies to Great Britain and Ireland.

II.—PRACTICAL SANITATION.

The year 1892 has not been marked by any great number of sanitary patents. A few sanitary appliances have, however, been brought out, and deserve notice.

Messrs. J. Tylor & Sons, 2, Newgate Street, London, have patented their Silent Outlet "Tower" Valveless Waste-Preventing Syphon Cistern. The great advantage of this cistern is that it is quite silent in action, and consequently the great annoyance caused by the noise made by small waste-preventers at the end of the discharge of the water into the closet-basin is entirely done away with. The chain once pulled starts the syphon action, and does not require to be held down. The little valve on the top of the dome (*vide Fig* 69) is provided with a lever, which is pressed against by a float always under water.

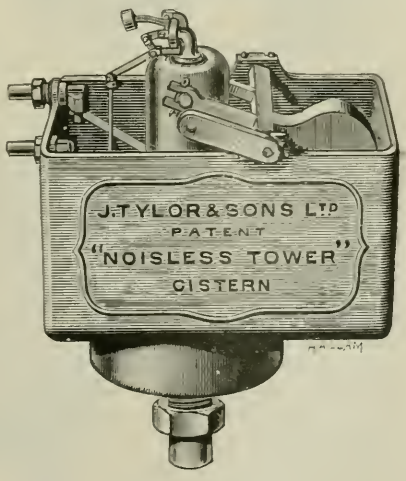


Fig. 69.

When the cistern has discharged nearly the whole of its contents, the float descends and opens the valve on the top of the dome, thus admitting air, and thereby breaking the syphon-action of the cistern and preventing the gurgling noise of the water at the inlet of the syphon.

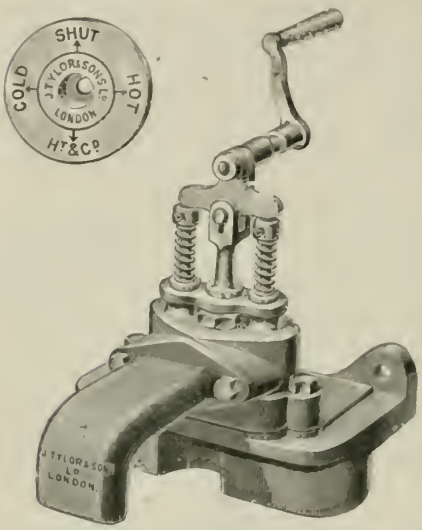


Fig. 70.

Messrs. Tylor & Sons, in their capacity as brass founders, have lately brought out some bath valves, two of which are shown here in section. *Fig.* 70 shows a very useful Public Bath Valve, the object of which is to prevent waste of water by means of the supply and waste valves being under the control of the attendant outside, and not of the person using the bath. One hundred and sixty sets of these valves have lately been fixed by the Vestry of Islington in their Public Baths and Wash Houses. *Fig.* 71 shows the "Claybury Pattern" Bath Valve, which is useful for Lunatic Asylums and other Public Institutions. The principle is that the hot and cold water are mixed together before entering the bath, *and that the cold water must be turned on before*

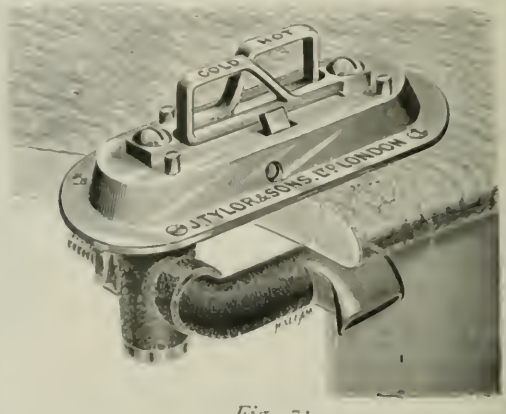


Fig. 71.

the hot water, thus entirely removing the danger of scalding a patient through carelessness on the part of an attendant. The valves are of best gun-metal and very strong; they can be securely locked with a key when the bath is not in use.

Mr. George Jennings, of Lambeth Palace Road, London, has this year improved his "1891 W.C."* by dispensing with the use of the butterfly valve, and in lieu thereof by carrying up a pipe, which prevents the air from passing down into the syphon until the discharge has ceased to flow. He has also made improvements in his water-waste-preventing cistern, by rendering it silent in filling and discharging, and by making it valveless.

Mr. Thomas Twyford, of Hanley, has patented a very useful form of W.C., under the name of "Deluge Adamant," a section of which is here shown (*Fig.* 72). It is in the form of a wash-down pedestal, and being made in extra strong Cliffe Vale Fire Clay is the strongest closet-basin made, and therefore especially useful for schools, factories, asylums, barracks, and all places where provision has to be made against rough usage. The thinnest part is more than an inch thick, so that the closet is practically unbreakable.

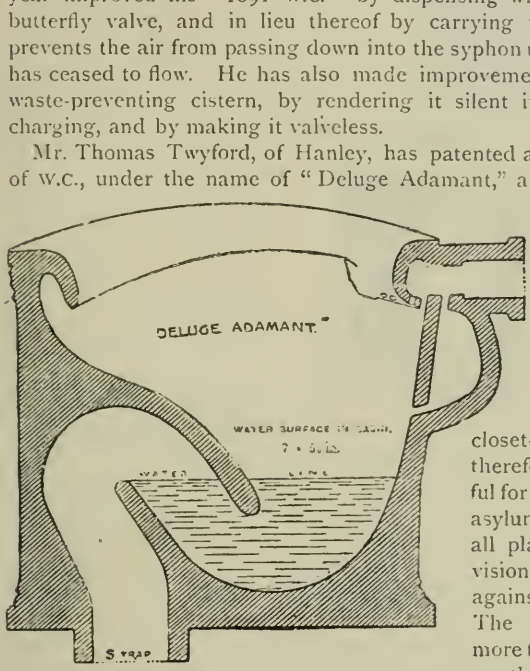


Fig. 72.

Messrs. Reid & Co., 69, St. Mary Axe, London, have lately brought out an article of great use in Invalids' apartments, viz., a portable W.C. It is furnished with a tank constructed to hold a good supply of water, which is effectively distributed over the basin by means of an excellent flushing arrangement. The pan is so jointed with the container that, when the apparatus is supplied with water, the joint is rendered air-tight, and, consequently, the possibility of smell arising

* See "Medical Annual," 1892, page 554.

therefrom reduced to a minimum. The section (*Fig.* 73) explains itself, and the keynote of the appliance is (in the words of the patentee) "cleanliness, comfort, and convenience in Invalids' aparaments, Country Houses, House-boats, etc."

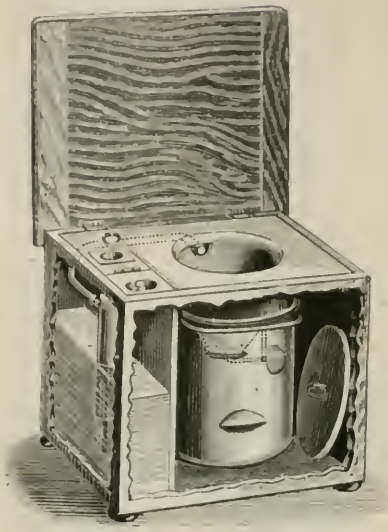


Fig. 73.

Mr. Jones, of Sidney Street, Chelsea, is still improving his various sanitary appliances. His canvas or indiarubber bags, which, when blown up, plug a drain so that the hydraulic, or water, test may be applied, are now fitted with, and strengthened by, a metal plate at the tubing end, together with a screw-valve for letting the air out. We can speak personally as to these improvements, though at the same time we prefer his new expanding screw-stopper or drain-plug, used for the same purpose, with a special hollow rubber ring fixed between the metal discs. The sizes vary from 1½ to 9 inches. Mr. Jones has also brought out an improved ventilating manhole cover, arched on the inside and corrugated for strength, thereby making it useful in main roads where there is very heavy traffic. The ventilating holes round the cover are so arranged that dirt, etc., falling in passes into a water groove immediately underneath. There is thus no impediment to the fresh air current, whilst the cover is provided with two deep seals.

Whilst on the subject of drainage, attention may be drawn to the glass drain pipes being made by Messrs. Appert for the new drainage system at Marseilles. The chief advantage lies in the smoothness of their interior, saving all friction, and rendering them self-cleansing.

Still another inventor has suddenly discovered that the way to prevent smokey chimneys is to narrow their throats, and for this purpose Mr. James Mason Barber, of Westminster, London, uses a trapezoid plate, which is perforated centrally for the escape of the smoke, etc. We may in this connection refer to the patent cowl of Mr. E. D. Hoyland, of 2, Walbrook, London, E.C. It is very simple

in construction, is automatic, and devoid of mechanism likely to get out of order. The figure explains itself (*Fig.* 74). The smoke issues in the same direction as regards current as that produced by the wind striking the cone outside. It is applicable to smoke-flues, soil-pipes, steam-pipes, etc.

Fig. 74.

Little has been heard during the past year of smokeless coal, but we may with advantage draw attention to the Economic Smokeless Fire Co., of Market Street, Bradford. They exhibited this year, and gained a gold medal for, a smoke-consuming stove. The air which feeds the fire is carried first in a downward direction, through the whole body of the coal in the grate, before allowing it to ascend in the chimney. In this way there is complete combustion; and though the principle is old, the method of effectually and practically applying the principle is new and valuable (see *Figs.* 75 and 76). The construction and principle of this grate will be understood at once from the two diagrams, and the special "Lancet" Commissioner states that "the production of soot in this Patent Stove is practically *nil*." There is also an enormous saving in fuel. The invention is a most useful one sanitarily.

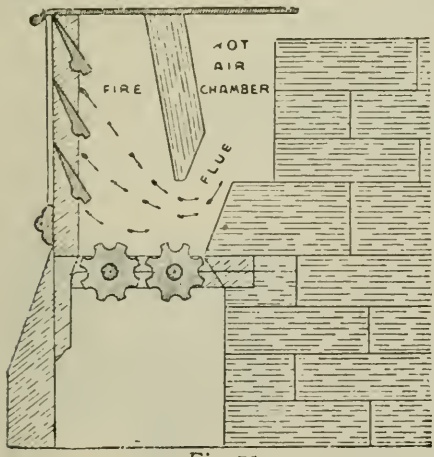


Fig. 75.

The latest application of electricity, viz., for warming and cooking purposes, deserves mention, seeing how successfully it worked when shown this last year at the Electrical Exhibition, at the Crystal Palace, and in the exhibit by Messrs. Crompton & Co., at the Health Exhibition, Portsmouth. There is, of course, no combustion, and so no necessity for chimneys or flues at all.

The subject of lead poisoning has been again to the front, and in connection therewith a new pipe has been patented by Messrs. Walker and Co., of Heckmondwike. It consists of a strong wrought-iron pipe fitted inside by hydraulic pressure with a pipe of pure tin. The water fittings are also lined with tin, and both pipes and fittings are tested to 3,000 lbs. pressure to the square inch.

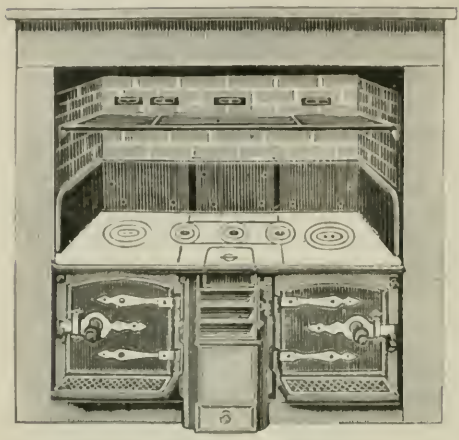


Fig. 76.

Disinfection is important, and various methods have been offered during the last year. Thus, Messrs. Beedzler & Co., of Norton Folgate, London, E.C., have lately patented their "City of London Sanitary Heart" for disinfecting apartments. It is a heart-shaped cake of compressed disinfectants, and is useful for hanging up in various rooms so as to render the air pure, sweet, and free from all injurious contamination. The patentee claims for them that they are pleasant, fragrant, and ornamental; besides being of assistance in the prevention of infectious diseases. They are made in three colours—red, white, or blue, and are said to last at least from six to twelve months. Messrs. Beedzler & Co. had previously brought out a similar thing in the shape of a *slate*, which they called the "Sanitary Slate," and which is used in exactly the same way.

The Sanitas Co., Bethnal Green, London, still continue to improve their disinfecting articles, and have lately brought out a "Sanitas Inhaler," which is likely to be of great use in diseases of the throat and lungs.

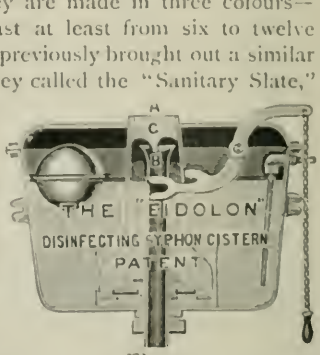


Fig. 77.

Connected with disinfection, mention may be made of the "Eidolon" Disinfecting Syphon Cistern (*Fig.* 77), recently patented by Mr. Milton Syer, of 36, Rye Lane, Peckham

London. The syphon is silent in action, has no valves or rubbers, and is charged with a disinfectant for 1000 discharges. B is the disinfecting chamber into which the disinfectant is placed and kept from wasting in the intervals of flushings. The chamber can be re-charged with disinfectant at a small cost, whilst the cistern is designed to meet the requirements of all water companies.

The Chrysalis Compounds Co., of 14., Glasshouse Street, Regent Street, London, have introduced two forms of their celebrated cleanser viz., the *gelatinous* and the *concrete*. It is composed of vegetable extracts, which possess remarkable antiseptic and cleansing powers, and contain no ingredient which can prove harmful to the skin, the hair, or the most delicate textile fabric. It is, however, *not* recommended for leather, or silk velvet; but, on the other hand, has the remarkable power of cleansing "cotton-waste," which is so largely used by engine-men, and those engaged in factories and work-shops. It is said to be a thorough disinfectant.

Messrs. Dent & Hellyer, of 21, Newcastle Street, Strand, London, have brought out several new patents this last year, but only one calls for attention here. It is an improved "air-tight" cover—"air-tight" in *reality*, and not (like so many others) in *name* only. A section and view of the cover (*Figs* 78 and 79) will be useful. This cover is intended to be supplementary to the ordinary surface ones, being fixed in the man-hole below them. It consists of a cast-iron plate with circular recessed aperture (C) nearer one end, so as to allow standing room at (F) for a man to pass rods through the aperture, or to examine the drain. The plate is built in the brick-work of the manhole, and it is grooved so as to form a key for the cement, and thus prevent the possibility of air passing around. The plate should be fixed as close down to the channel pipe as possible. The aperture (C) is covered with a cast-iron plate, having a tongue on its underside which dips into a channel around the aperture of the plate. This cover rests on a flange round the outer edge of the channel, packing being placed between to make a joint, and the cover being secured to the

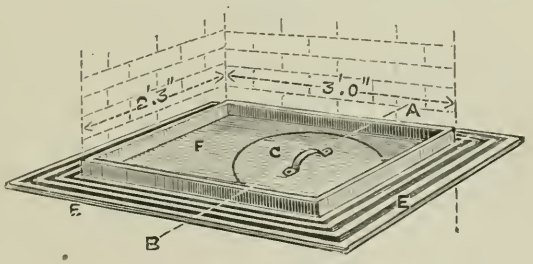


Fig. 78.

flange by screw-bolts and nuts. Over the whole is placed a second cover of wrought-iron, galvanized, with a rim dipping into the recessed sinking round the inner cover. Both this and the channel around the aperture are filled with water which, with the rubber packing, forms

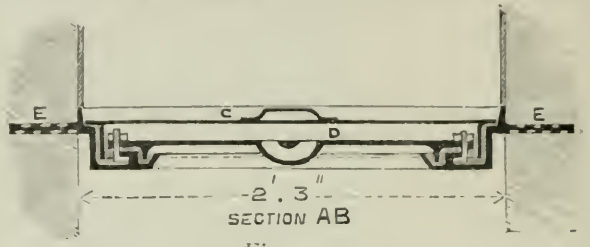


Fig. 79.

three seals. The top of the wrought-iron cover projects beyond the depending rim and rests loosely on the plate, allowing condensed moisture to run underneath into the outer sinking, and thus helping to make good the loss by evaporation.

GENERAL REMARKS.

The cholera scare in the autumn of 1892 was the means of causing an introspection of sanitary arrangements by various Urban and Rural Sanitary Authorities, their attentions being drawn to the methods in vogue for the disposal of their sewage and house refuse. Water supplies were looked to, and food inspectors were more energetic than usual. In this way the cholera scare undoubtedly did good, but it is doubtful if the effect will be permanent. The Local Government Board have issued a series of papers in reference to the measures to be taken during an actual, or threatened, epidemic of cholera. They contain many practical suggestions which should be of service to Medical Officers of Health. Copies may be obtained on application to the Local Government Board, Whitehall, London.

Sanitary Congresses and Association Meetings are getting more and more popular, and we may draw attention to the first meeting, in Dublin, of the New Institute of Public Health (the old Public Health Medical Society), with Sir Charles Cameron as President. Many papers were read and discussed, but the most important and interesting were: (1,) The President's address, in the course of which he laid it down as his opinion that typhoid fever is probably largely due to soil pollution, with the ground water charged with excess of objectionable organic matter, which, in decomposing, evolves noxious effluvia into the atmosphere: in other words, that typhoid fever may

be regarded as to a large extent of malarial origin; and (2,) A description of a new method of sewage purification (the Parry-Adeney process), by which the sewage is treated *biologically*. The suspended matters are removed mechanically from the liquid, which is then treated with oxide of manganese, which acts as an oxygen carrier, the agents of purification being the micro-organisms. The effluent is said to be absolutely non-putrefactive, and is free from chemicals, which are recovered and re-used in the purification process.*

County Councils still continue to vie with one another in giving the most perfect course of sanitary lectures, and many are the different centres at which Inspectors can now be examined, and become qualified. In fact, technical education generally is coming to the fore, and soon we shall have other registration movements than that of the Plumbers' Company. It has been left to the Buckingham County Council, however, to start sanitary lectures in another direction, *i.e.*, for ladies, and we shall look forward during the coming year to this line of lecturing becoming popular.

The Sanitary Institute of London has at last been rewarded for the part it has played in lecturing to Inspectors, and the Public generally upon sanitary subjects, for the Local Government Board have approved it as a body, whose certificate of sanitary knowledge fulfils the requirements of section 108, of the Public Health (London) Act, 1891. This is a compliment paid to the Institute, but a compliment richly deserved.

* The ogygen-carrying compounds are sodium or potassium manganate, or permanganate, and the manganese is recovered as an insoluble oxyhydrate.

New Inventions, Improvements in Pharmacy, and Dietetic Preparations.

DIETETIC PREPARATIONS.

The number of these Preparations which have come under our notice during the past year has not been large, but all have proved satisfactory, both in reference to their analysis and practical usefulness.

Beef-juice (Wyeth).—This preparation is very deserving of the wide reputation it has attained among physicians, as a stimulating form of nourishment in cases of exhaustion or retarded convalescence. We can add our testimony to the record of excellent results attained by its use in such cases.

Bovril Paste.—This is sent out in porcelain jars, under the name of "Bovril for Invalids." When placed on the tongue there is a marked absence of the strong flavour which most meat essences possess. The taste is slight, and rather agreeable than otherwise. It is specially designed to be used as a paste for sandwiches, and employed in this way it will provide a meat diet for those who object to a joint and rebel at beef tea. We all have experience of the cases in which such helps are required to secure proper nutrition for the invalid, but we think this paste will also prove useful for the preparation of sandwiches for more prosaic purposes, and we welcome it as an useful addition to our resources.

Bovril Wine is another new product of the well known Company. It contains, in addition to Bovril and port wine, a certain quantity of the inevitable extract of malt. It appears to us to possess nourishing and sustaining properties, in excess of most other productions of its class, and we can confidently recommend it. We notice that it is sent out in narrow-necked bottles, with a long cork, difficult to remove with an ordinary corkscrew. It would save the purchaser trouble if a more convenient method of getting at the contents were adopted.

Fry's Cocoas.—We have received samples for analysis of several of Messrs. Fry & Sons' productions. Our results only tend to prove the complete reliability of the statements made by the firm. Their Concentrated Cocoa has been carefully examined, and we can find no flaw in its claim to be an absolutely pure Cocoa, from which the superfluous fatty

matter has heen extracted. It is of a delicious flavour, and there is no beverage which can so confidently be recommended for the use of invalids. Their Malted Cocoa is a combination of the above, with Allen and Hanburys' Concentrated Extract of Malt, and forms an excellent method of administering malt in suitable cases; but for ordinary purposes the Cocoa Extract is so well digested that it does not require such addition. We have been particularly interested in "Ceylon Chocolate" which the firm now produce from the cocoa palm (which has only recently been placed under cultivation in the Island) and which, from the excellence of the samples sent us, is likely to be a very important addition to the firm's resources. The Chocolate has a distinct and characteristic flavour of its own, and will be much appreciated by those who use it either as a beverage, sweetmeat, or food.

Cocoatina.—We have examined a sample of this cocoa essence, manufactured by Messrs. Schweitzer, and find that the flavour and aroma of the cocoa is well preserved, while as a beverage it is light and easily digested. It can be safely recommended for the use of invalids.

Condensed Milk.—Attention has recently been directed to the value of Condensed Milk as a food, both for infants and in place of fresh milk, for general use. In Sweden, the question of milk as a means of conveying infection has been very much discussed, and in America the chemical changes which milk undergoes during the hot months are regarded as the most common source of diarrhœa and infantile cholera which are so prevalent there. The various appliances which have from time to time, been described in the "Annual" for sterilizing milk, have all the fatal objection, that they involve an amount of personal trouble, which will be undertaken only in the exceptional household, and, therefore, they do not meet the difficulty. As Condensed Milk is sterilized, and does not undergo chemical changes very readily, it has been proposed as better than fresh cows' milk, but there is an idea very prevalent, and it has even crept into some of our scientific periodicals, that milk during the process of condensing is always deprived of a certain quantity of cream, and is therefore less nutritious. We recently applied to the Anglo-Swiss Condensed Milk Co. for information on this point, and they informed us that the statement was absolutely erroneous as applied to their productions, and they sent us an invitation enabling us to inspect the whole process of manufacture at any of their factories, on any day convenient to ourselves. We have no doubt that they would extend the same courtesy to any of our readers. The process is one of extreme interest,

but to watch it throughout it is necessary to be present early in the morning, when the milk arrives, and follow it through its stages during the whole day. Although the Anglo-Swiss Condensed Milk Co. have convinced us that their productions contain all the cream belonging to the milk, and that they possess when diluted all the nutritious properties of fresh milk, free from all risks of infection, or acid fermentation, yet, there is no doubt a certain amount of condensed skimmed milk upon the market, which is not nutritious, and which readily undergoes chemical changes. It appears to us, therefore, that Condensed Milk must not be recommended for infants or invalids unless the Brand be specified. From the investigations we have been able to make, we are sure the Anglo-Swiss Condensed Milk may be recommended with the utmost confidence, for every purpose where milk is required. The firm sent us samples of their Condensed Milk with chocolate, with cocoa, and with coffee. To make a cup of either of these beverages, it is only necessary to add hot water to one or two teaspoonfuls of the contents of the tin. The flavour is all that can be desired, and the convenience which this arrangement affords, will recommend it for use under many circumstances.

Milk for Infants and Invalids.—Messrs. Welford and Sons, have long made a speciality of supplying fresh milk for infants and invalids. The precautions taken by them to prevent the milk from being contaminated, and to ensure that it is only taken from cows in good health, are of the most elaborate character. The farms are placed under rigid medical supervision, and the cows are visited three times weekly by a veterinary surgeon. They make careful arrangements that the milk shall be supplied fresh. The Company are also manufacturers of Koumis and humanized milk, and there can be no question as to the reliability and purity of the products which they supply either for general use, or to meet the special requirements for infants and invalids.

Diabetes Whisky.—The sample of whisky, bearing this name, sent us by Messrs. G. Back & Co., Devonshire Square, Bishopsgate, London, is a well matured spirit, of good flavour, and will be found an useful stimulant for invalids.

Diabetic Foods.—One of our patients, a robust *malade imaginaire*, recently informed us that she was eating gluten biscuits, because she understood they were "so good for the kidneys," and she recommended them freely to her friends. There can be no doubt that the gluten and almond biscuits and sponge-cakes, which Mr. Callard, of 146, New Bond Street, has recently prepared for the

victims of diabetes, are so pleasant to the palate, that invalids require no encouragement to use them. This is a change from former days, when the gluten diet was one of the greatest inconveniences caused by the disorder. The soft sponge-cakes made by the above-mentioned firm are particularly appreciated by patients.

Infant Feeding.—This subject has lately attracted a great deal of attention, especially among our American confrères, who having cholera infantum constantly with them in the hot months, are tireless in their endeavours to produce a system of feeding which would obviate some of the dangers to which children are exposed by the defects of the present system. To them and to our English readers, we can recommend the system of feeding, which has been worked out by Messrs. Allen and Hanburys on principles which are obviously scientific and rational. They propose the use of three different foods at various periods of infant life. The first they call "First Food for Infants." This is intended to be used from birth until the infant attains the age of three months. It consists essentially of cows' milk from which the excess of casein is removed, and then sufficient cream, albumen, and milk sugar are added to bring it to the standard of human milk. It is then sterilized and concentrated in vacuo, and preserved for use in hermetically closed vessels. It is obvious that this is a more nutritious food than diluted milk, and that it is absolutely free from all sources of infection or risks of decomposition or adulteration. It requires only the use of hot water to prepare it for use. After three months they recommend the use of the "Mother's Milk Food" which practically consists of an addition to the first food of the soluble product of the action of malt upon wheat, which they consider, in addition to the extra nourishment, is also a stimulant to the digestive powers of the infant. At the age of seven months they recommend the use of their well-known malted food. We think that the practitioner can hardly do wrong in adopting the methods and the foods which Messrs. Allen and Hanburys have brought forward as the result of careful chemical analysis, and with the practical assistance of valued members of our profession.

Isinglass.—As a rule the foods we use in the treatment of invalids are little liable to adulteration, but Isinglass is an exception. The best is imported from Russia, and Messrs. Gridley and Co. obtain the Isinglass which bears their name wholly from this source, and guarantee its purity. After careful investigation we can recommend this Isinglass for all purposes for which it may be required in the preparation of invalids' food.

Lactomaltine.—This preparation contains the constituents of malt and milk, and may be used either as a substitute for cod-liver oil or to aid the nutrition in cases where the assimilation of food is difficult. It is capable of digesting five times its weight of starch in three hours, is decidedly pleasant to the taste, and is the best preparation of its own class with which we are acquainted. It is manufactured by Messrs. Anderson and Co., 12, Murano Place, Edinburgh.

Lentiline Biscuits.—The manufacturers, Messrs. E. Marriott and Co., of Hastings, describe these biscuits as "crisp, nutritious, and highly palatable." We can fully endorse these statements, and can go further and say that we have seldom tasted a biscuit with so little tendency to grow starchy in the mouth. Being composed largely of lentils, there can be no doubt of their highly nutritive value, and we are sure that they will be well liked by invalids, and readily digested by them.

Malt (Fluid Extract of).—We must confess to being a little tired of examining extracts of malt. All possess the diastatic properties claimed for them, and the main difference between the various preparations is that while most are of the treacly consistence, which was formerly the characteristic of such extracts, some are now produced in a fluid form, and possess greater convenience in use. Messrs. Wright, Layman & Umney send us samples of both classes, and both appear to be well suited for the uses for which they are intended.

Oatmeal (Patent Cooked).—Messrs. George King and Son, whose excellent dietetic preparations have been frequently mentioned in the "Annual," have sent us a sample of their patent Cooked Oatmeal. We have frequently expressed the opinion that raw oatmeal requires an amount of cooking to render it digestible which it receives in very few households, and we have always contended that the cooking should be partially or wholly performed by the manufacturer. This preparation so precisely adapts itself to these views that we can only hope that they will appear reasonable to our readers, and that they will commend this preparation to their patients. The saving of time and trouble is a recommendation apart from the fact that the preparation is a guarantee against conditions, under which it is almost impossible to secure that the necessary time will be devoted to making the dish of "porridge" when raw oatmeal is used.

Peptonizing Tablets (Sumner).—Messrs. Sumner and Co., send us some peptonizing tablets, each of which is sufficient to peptonize a pint of milk or gruel. They are very convenient for use, and render the preparation of peptonized foods very simple.

MINERAL WATERS.

Reginaris.—Under this name the water of a spring at Neidermendig, Germany, has been imported for use as a table-water. It is practically a pure spring water, containing the calcium and magnesium carbonates, and the chlorides of potassium and sodium. It is rendered effervescent by the addition of carbonic acid gas. It is well adapted for use as a pure, refreshing, and pleasant beverage for table use.

Ferruginaris is a production of the same Company, and is a sparkling effervescing chalybeate water, which is well liked and easily assimilated by anæmic patients.

Johannis Water.—The Company have made a new departure in the supply of this water by introducing quarter-bottles, which will prove of great convenience to those using this excellent table water, which was fully described in our last issue.

We have also received samples of the Flitwick chalybeate water, the Levico, Arsenio-Ferric mineral water, and of Franz-Josef, Austrian aperient mineral water, all of which have been favourably noticed in previous editions of the "Annual."

PROGRESS OF PHARMACY.

A great many samples of articles have been sent us for examination which have been already fully considered in previous issues. It is impossible for us to refer to preparations which have been once noticed, unless some alteration or improvement demands mention.

Antisepticine.—This is a combination of the non-poisonous antiseptics, thyme, eucalyptol, peppermint, gaultheria, and benzo-boracic acid. It is used for all purposes for which antiseptics would be used —both internally and externally ; but we think it will prove especially useful as a mouth-wash, gargle, and as a lotion for the treatment of chronic catarrh of the nose and vagina. It has a slightly astringent action on the mucous membrane, it is a more efficient antiseptic than many of those ordinarily used for this purpose, and it possesses an advantage in the fact that it is non-poisonous.

We have asked our chemists to keep it in stock. The manufacturers are R. Sumner & Co., Liverpool.

Arsenite of Copper Tabloids.—These are made by Messrs. Burroughs, Wellcome & Co., each containing 1,000th of a grain. This remedy has been recently recommended by Dr. Hare, of Philadelphia, in the treatment of anæmia, and it has also been used with success for cholera morbus, cholera nostras, cholera infantum, dysentery and

in typhoid. This attenuated strength of the arsenite of copper is intended specially to allow of the frequent and regular administration of small doses, which are considered to be the conditions essential to success.

Belladonna and Cubeb "Tabloids."—These "Tabloids" are composed of a formula specially recommended by Dr. Lennox Browne in various forms of rhinitis, laryngitis, bronchial catarrh, laryngeal cough, etc., etc. They are effervescing, and are much appreciated by patients. Manufactured by Burroughs, Wellcome & Co.

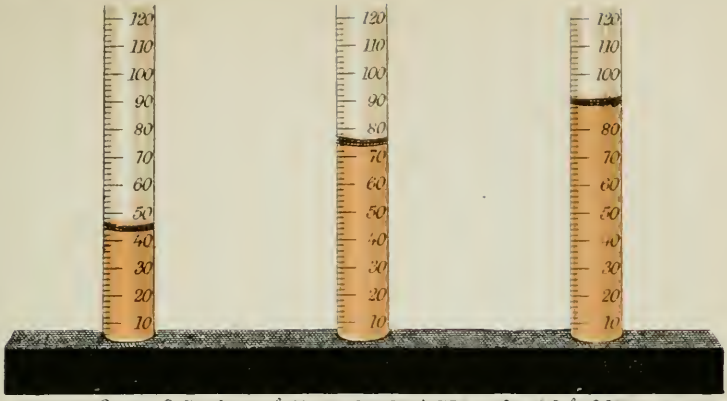
Bi-palatinoids.—The value of iron as a remedy in simple anæmia is so universally understood that our patients often anticipate the "iron tonic" we prescribe. Opinions, however, widely differ as to the *modus operandi*—so much so that many physiologists of great eminence have arrived at very different conclusions, even after close study. On the other hand clinical experience has clearly demonstrated the certainty with which we may predict a highly beneficial result from the administration of freshly prepared carbonate of iron, and more especially from nascent ferrous carbonate elaborated in the alimentary tract of the patient. This is now possible by the use of the "bi-palatinoid" mode of administration. This ingenious product of modern pharmacy, introduced by Messrs. Oppenheimer, Son & Co., Lim., 14 Worship St., E.C., consists of two concave gelatine discs, joined at their edges, and through the centre of the intervening space of which runs a gelatinous septum. On one side of this, sodium carbonate is placed; on the other, ferrous sulphate. These two salts are kept apart until the action of fluid or the gastric juice causes the "bi-palatinoid" to swell up and release its contents, when the two salts by their union produce ferrous carbonate in a nascent state. Many have borne testimony to the great advantage which this mode of administering iron possesses, but no clinical tests have been yet made of its direct effect in increasing the quantity of hæmoglobin, and we thought that some experiments we have made in this direction would be of interest.

In three consecutive cases of simple anæmia we were struck by the invariably rapid improvement which followed the administration of iron in this manner, as shown on *Plate VIII.*, the percentage increase in the hæmoglobin speaking for itself.

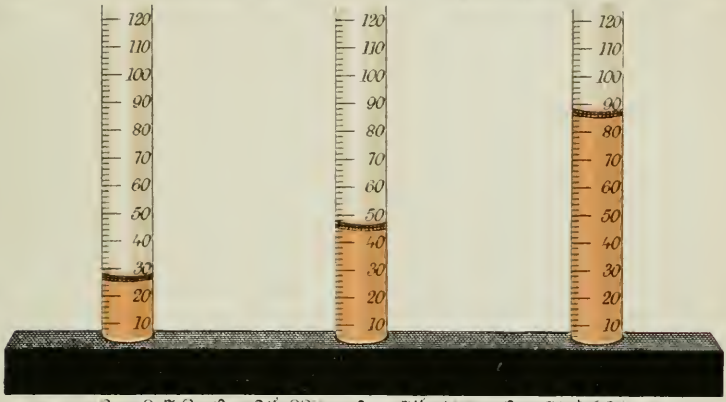
CASE 1.—S. A., female. On admission, 48 per cent.; after eleven days, 75 per cent.; after three weeks, 90 per cent.

CASE 2.—J. S., female, aged nineteen. Extremely anæmic on admission, 28 per cent.; after one week, 44 per cent.; after three weeks, 85 per cent.

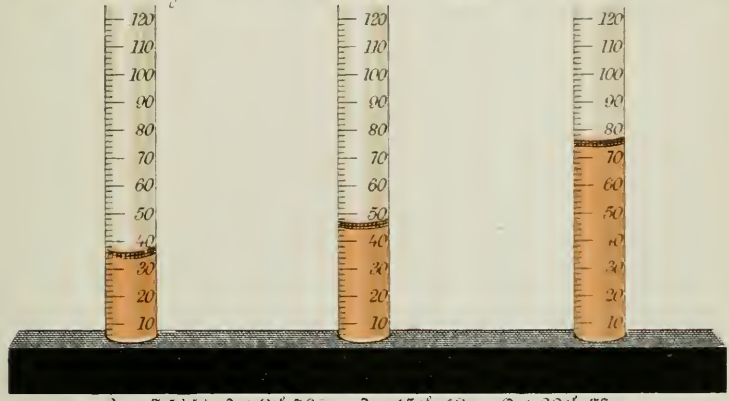
CASE 3.—H. H., female, aged twenty. On admission, 36 per cent.;



Case 1, S.A. Oct. 11th 45%. Oct. 22nd 75 . Oct. 29th 90%.



Case 2. J.S. Oct. 10th 28 . Oct 17th 44 Oct. 31st 85%.



Case 3. F.F. Oct. 8th 36%. Oct. 15th 48 Oct. 29th 75

after one week's treatment, 48 per cent.; after three weeks, 73 per cent.

In all these cases two "bi-palatinoids" were given three times daily during the whole period of observation, and no other remedy. The results greatly exceeded our expectations. Prof. Tumas in his experimental investigations on the pharmacology of iron, found that in artificial anæmia induced by bleeding, the restoration of hæmoglobin progressed far more rapidly during the administration of iron than the restoration of the corpuscles. In our patients, of course, the deficiency was hæmoglobin only, the corpuscles not being markedly diminished in number. When we consider what a very minute percentage of iron hæmoglobin contains (·336 per cent., Zinoffsky) it is not difficult to understand that provided the iron is administered in an assimilable form, the restoration should be so very rapid; but our chief difficulty hitherto has been to ensure that the iron should be absorbed.

Blaud's Pills.—Messrs. Sumner & Co. now prepare these with a gelatine coating, on the ground that there is not the same necessity for drying as there is with the white coating. They are therefore rather more soluble.

Boracis Co. (Syrup of).—This is an excellent preparation, as an application for aphthæ of the mouth, ulcerated throat, etc., made by R. Sumner & Co., of Liverpool.

Boric Acid Soap (Superfatted).—This is a soap introduced by Dr. C. R. Illingworth, which, in addition to being superfatted, contains Boracic Acid to the extent of 3 to 5 per cent., which is stated to exist in a free state, and not chemically combined with other constituents of the soap. It is well made and has a pleasant odour, but does not lather very freely with hard water. Its effect on the skin appears to us to be very slightly astringent, and we should consider it especially useful for patients who have a tendency to excessive moisture of the hands and feet. Messrs. R Sumner & Co. are the agents.

Camphoid.— This is a solution of pyroxylin and camphor in absolute alcohol. It is used as a vehicle for the application to the skin of such drugs as carbolic acid, chrysarobin, icthyol, iodoform, iodine, etc. Its advantage is that it dries in a few minutes, leaving an elastic opaque film which is not easily washed off. We have personally felt the need of a preparation of this kind, and we believe it will be of the greatest use in the treatment of many forms of skin disease, and especially chronic acne, in which the protection of the skin from the air and from friction is often a most important part of the cure. It is prepared by Messrs. R. Sumner & Co., of Liverpool.

Cascara (Miscible Liquid Extract of).—It only differs from the B. P. preparation in the fact that it is miscible in all proportions with water. We have received samples of this preparation from Messrs. Wright, Layman and Umney, and from Messrs. R. Sumner and Co., of Liverpool.

Coca (Miscible Liquid Extract of).—The above firms also send us samples of this preparation in which the chlorophyll and wax are removed, so that the extract is miscible with water, wine, or syrup in all proportions.

Cod-liver Oil.—Some very important investigations in respect to the nature of the constituents and method of preparing cod-liver oil have only recently been concluded by Mr. F. Peckel Möller, of 43, Snow Hill, London, and the results are of so much practical interest that we are glad to place Mr. Möller's communication before our readers.

The samples of the oil sent to us, prepared by the new process, have been tested, by his request, on patients who could not ordinarily take cod-liver oil, with the most satisfactory results. We consider that the mystery of the "active principles," as well as the difficulties attending the administration of cod-liver oil, have been completely solved by these investigations. Mr. Möller's communication is as follows :—

The constitution of cod-liver oil has, ever since its appearance as part of the materia medica, been an object of curiosity to scientists, who, armed with the latest and best analytical weapons of chemistry, have tried to solve the mystery. The first chemical research on cod-liver oil dates as far back as 1822, by Wurzer ("Hufel. Journ.," Dec. 31, 1822); the most elaborate work by later investigators was by De Jongh, 1843 (*Disquisitio comparativa chemico-medica de tribus olei jecoris Aselli speciebus*). Amongst still more recent workers may be mentioned C. Schaper, 1869; P. Charles, 1882; Kremel, 1884; Hager, 1885; and Gautier and Mourgues, 1888. All these agreed that the main part (95 to 98 per cent.) consisted of the three glycerides—olein, the fluid part, about 70 per cent.; palmitin and stearin, the solid part, about 25 to 28 per cent. As these compounds are the regular constituents of ordinary fats, no importance was attached to them, but diligent search was made to find "the active principle" in the remaining part of the oil. A variety of things were found, and one by one these were in succession presented by their discoverers as the much wanted panacea. I shall only call to mind iodine, gaduin (by Berzelius supposed to be bilifuloic acid), constituents of the bile, trimethylamine, phosphor compounds, free fatty acids, especially oleic acid, morrhuine and morrhuol, etc.

When it is remembered that the chief property of cod-liver oil is to build up and strengthen the system, and when at the same time the real nature of the 95 per cent. had in point of fact never been properly accounted for, these suppositions about the "active principle" secreted in the remaining few per cent. of the oil, had such a fantastical tinge, that my firm were induced more than ten years ago to let the chemical department take the investigations of this chief part of the oil in hand. The analytical examination of fats was at that time almost a hopeless task, as any proper method

of separating different yet very often closely allied higher homologues of the alipatic acids was not known. Chemistry has, however, made great strides during these years, and the fatty acids have had their share of its advance. A method for determining the number of hydroxyls, called the acetylating method was discovered, and Mr. Heyerdahl who had the charge of these investigations employed this method in order to see if there were any hydroxy-acids in the oil. He found there were; but what puzzled him was that he never could get acetyl-values that agreed, however much care he took to make the experiments under the same conditions. By careful comparison of the results of the whole series of analyses, it struck him that all the hydroxyls could not be pre-present in the oil, but that the greater part must have entered during the actual determination of them. Of course, they could only be supplied from the surrounding air; then he repeated his experiments in an atmosphere of hydrogen. The results improved considerably; but not until he had guarded the oil against the influence of the oxygen of the air, from the very beginning to the end of the operations, did he obtain agreeing results; the saponification of the oil, the preparation of free acids, their acetylisation and the final titration had all to be conducted in a current of hydrogen; then, and only then did he obtain constant results. This discovery suggested naturally a flaw in our manufacture of the oil, and at the first opportunity it was altered accordingly, the result being an oil, the acetyl value of which was O, *i.e.*, no hydroxy-acids were present; and this is the oil we are now preparing in a current of carbonic acid from the moment the livers are put into the melting apparatus until it is bottled. The oil prepared in this way proved to be free from the unpleasant property of repeating; at least all records that have been collected so far are unanimous on this point. It therefore appears that the pure oil, as it is found in the livers of the living fish, is entirely free from this disagreeable quality, and that it is acquired in the course of manufacture. It seems probable, judging from common experience in other quarters, that the hydroxyls are the source of this drawback, because hydroxylating is almost identical with becoming rancid, and we know that rancid fats of any kind are not easily digestible. The behaviour of the oil during analysis being quite unexpected, the supposition that olein, palmitin and stearin were its constituents could no longer be entertained. Heyerdahl has tried to isolate the acids that really constitute the glycerides of the oil. He has succeeded in preparing the bromine substitution product of one, and probably the most important of the oil's constituents, on which account he has given it the name of therapic acid. Its formula has by the ultimate analysis proved to be C_{17} H_{26} O_2, consequently belonging to a series of alipatic acids with four double bonds, a series which has hitherto been completely unknown, though the possibility of their existence has been theoretically certain enough. All attempts at preparing the acid in the free state have, in spite of every precaution, been in vain. Probably the four double bonds are close together, and at the opposite end of the carboxyl in the chain, whereby the stability of the linkage is greatly lessened, and this is, I suppose, the reason why it has not as yet been possible to isolate it, the agent that should set the oil free splitting it up at the same time into a variety of compounds of fewer carbon atoms. But, as already mentioned, its bromine compound is more stable because the double bonds are broken by the eight atoms of bromine adding themselves to the chain, and it has therefore been possible to prepare it pure for analysis with the result stated above. There is in the oil about 20 per cent. of this acid. Heyerdahl found also another acid which was more stable,

the empirical formula of which was determined by ultimate analysis to be C_{19}, H_{36}, O_2, consequently a homologue of oleic acid with two double bonds. This acid, which he named jecoleic acid, was also present in the oil to the amount of about 20 per cent. He believes there are one or two more acids belonging to the same class. He has, however, not found any stearic acid, but something like 4 or less per cent. of palmitic acid present

When we now with these discoveries before us look "for the active principle" in the oil, it appears to me that we have not to go far for an answer. It almost seems ridiculous to look to the fractions per cent. of morrhuol, gaduin, asellin or morrhuine, etc., to explain that peculiar and unquestionable building-up-property of cod-liver oil, the more so, as these precious compounds are not pre-existing in the oil, but decomposition products, some being formed in the hands of the analyst during his analytical work, others being confessedly the product of bacterial influences after the oil has left the hepatic cells. Is it not much more rational to see the therapeutical action of the oil in these newly discovered acids? As is well known, there is a compound called lecithin, which is found in all growing cells; and another, protagon, present in the brain and containing lecithin. This lecithin is composed of phosphoric acid, to which a nitrogen-compound cholin is linked on one side, and a glyceride on the other. This glyceride has been found to consist of two molecules of fatty acids of the higher homologues; sometimes both have been palmitic acid, sometimes one palmitic or stearic acid, and the other oleic acid, obviously depending upon the sort of fat that has been received into the digestive organs. Now I think the simplest way to explain the *raison d'être* of this remarkable compound is to consider it as a sort of store for those things that are necessary to build up the system or to maintain the going of the machinery. Through the oxygen of hæmoglobin the lecithin stored is split up into various compounds (requisite for the maintenance of the body and for which all necessary elements are present in lecithin), carried away with the blood, and deposited at their proper places. It appears to me reasonable that the easier lecithin is split up the better it is fit for this building up and maintaining by the blood, and if that is so, the superior action of the therapeutic acid forming part of lecithin in lieu of any other known fat is self-evident.

I look upon it as a confirmation of my theory that I have never seen anyone grow fat upon cod-liver oil, but I have had opportunities of seeing what wonderful effects it has upon the brain and what protection it is to delicate people against taking cold.

Cremor Bismuthi.—This is a very perfect emulsion of bismuth, and also very palatable. It is made by R. Sumner & Co., of Liverpool

Iodi Sol. (Downes). The advantage of this preparation of Iodine is, that while it is freely absorbed by the skin, it does not cause irritation or vesication; in fact it may be almost said not to colour the surface to which it is applied. It is, therefore, of particular service in the treatment of indurated glands, and swelling of the joints, or for any purpose where the absorption of iodine is the end to be accomplished, rather than a counter-irritation of the skin. It is made by Messrs. Brook & Co., 136, Lower Baggot Street, Dublin; and is very popular with our Irish colleagues.

Liq. Colchicinæ Salicyl.—This preparation contains $\frac{1}{32}$ of a grain of salicylate of colchicine in each fluid drachm. It has been used to relieve pain, rheumatic affections, gout and lumbago, with a great amount of success. It is a remedy which is well worthy of a trial in the treatment of these disorders where the relief of pain is more often a devoutly wished-for consummation, than an end which is readily accomplished. Hopkinson & Co., Nottingham, are the makers.

Hyd. Biniodide Fort (Liquor).—This is a soluble preparation of the biniodide of mercury (strength 1 in 50), made by R. Sumner and Co., of Liverpool. We have had a similar solution prepared for our own use for many years. It is not only valuable as an antiseptic and as a local application to the throat in cases of diphtheria, but it is also one of the most generally useful remedies when diluted and used internally in tonsillitis and allied conditions of the throat. It has lately been recommended as a remedy for scarlet fever. It is a preparation which the practitioner will find very useful to carry in his gynæcological or surgical bag, and we should feel at a loss without it.

Iodic Hydrarg.—We noticed this valuable antiseptic in a previous issue. Messrs. Burroughs, Wellcome and Co. have now prepared it in the tabloid form, two of which dissolved in a pint of water yield a solution the strength of which is approximately 1 in 4,000. These tabloids will be found extremely useful on account of their portability, both for surgeons and gynæcologists.

Ipecac. (Fluid Extract).—This is a standardized preparation, guaranteed to contain 1·25 per cent. of emetine, so that 1 ounce is equivalent to 20 ounces of the vinum ipecac. of the Pharmacopœia. We consider this a most valuable addition to the remedies on the action of which absolute reliance can be placed. It is also convenient for practitioners who may wish to carry a few often used remedies in a pocket case, or in the "Buggy case" so much used by our American confrères, in order that emergencies may be readily met. It is prepared by Messrs. Wright, Layman and Umney.

Kola (Miscible Extract, Umney).—We have always entertained a certain degree of doubt concerning the active physiological effects of kola, and we were disappointed with our early trials with this agent. We have personally tested the miscible extract sent us by Messrs. Wright, Layman & Umney, and we found that it stimulated the mental and physical powers when exhausted in a very marked manner, and we shall look upon it as a very useful addition to our resources. It is miscible in all proportions with water, wine, or spirit.

Lin. Potass. Iodid. c. Saponæ (Liq.).—This is a very great improvement upon the thick pasty preparation of the Pharmacopœia, made by R. Sumner & Co., Liverpool.

Ol. Ricini Aromat.—The disagreeable taste of the oil is removed in this preparation, and it is subsequently flavoured with cinnamon, so that it is well taken by any patients who are nauseated by the castor oil in common use. It can be obtained of Messrs. R. Sumner and Co., Liverpool.

Pastiles (Medicated).—The patent process adopted by Messrs. Allen and Hanburys in the manufacture of their pastiles and jujubes gives them a particularly clear and brilliant appearance, and we observe that during mastication they are free from that gummy adhesiveness so commonly met with in articles of this class. Most of the lozenges of the Throat Hospital are prepared in this form, which is much more suitable for the treatment of throat affections than the hard angular lozenges of the hospital formulary. Messrs. A. and H. have a long list of formulæ which they keep in stock, and this list may be obtained on application, and become very useful to the physician in prescribing.

Petrolana.—This is intended as a soothing application to the skin in cases of eczema, pruritus, and abrasions. It is composed of wool fat, eosinine, oxide of zinc, and carbolic acid. We have been very pleased with the results attending its use, and we think, apart from its constituents, that its consistence and physical properties render it particularly suitable for the purpose for which it is intended. It is made by R. Sumner and Co., Liverpool.

Quatuor Hydrobrom. (Syrupus).—This is practically a syrup of the hypophosphites in which the hydrobromate salts of iron, quinine, etc., are used. They are less exciting than the ordinary salts, and the preparation is better borne by those whose system is soon irritated by the use of tonics. It is manufactured by Messrs. Battley & Watts.

Tar (Tabloids of).—The use of tar in bronchitis and pulmonary affections has greatly increased in favour during the past year. Messrs. Burroughs, Welcome & Co. have put up a 1-grain tabloid consisting of pure tar, freed from the acrid principles of many of the preparations in common use.

Tasmania Eucalyptus Oil (Platypus Brand).—The large and increasing popularity of eucalyptus oil as a disinfectant for the sick room has caused the manufacture of this substance to be undertaken on a commercial scale in Tasmania, and a company has been formed with offices at 138, Leadenhall Street, E.C. We have examined a

sample of the Company's production and find it to be free from those adulterations which are more common than not among the eucalyptus oils ordinarily dispensed. It has a fragrant, penetrating odour, but is free from that pungent irritating effect which some of the oils in common use produce. The Company also send some eucalyptus pastiles, each containing one minim. One of these strongly impregnates the breath for some time after use, although the flavour is by no means unpleasant. They may be used with advantage under any conditions where the necessity exists of using an internal antiseptic, and especially in throat and lung affections. We consider them the most potent eucalyptus pastiles we have tried, and this brand should be specified when ordering the oil or the pastiles.

Thyroid Extracts.—Messrs. Brady & Martin, of Newcastle, send us samples of various thyroid extracts which they have prepared for Dr. George Murray and others, who have published their results of the successful treatment of myxœdema by the use of extracts of the thyroid gland, used hypodermically and by the mouth. This subject is fully dealt with in the Dictionary of New Treatment, but it may be of value to the practitioner to know where these preparations may be obtained. The extracts sent are as follows: No. 1, Liquid extract for hypodermic injection; No. 2, Liquid extract for administration by the mouth; No. 3, A dry extract in the form of a powder. This last preparation is quite new and, although it has not yet had the extensive trial given to the liquid extracts, it should be equally valuable, and being permanent, will greatly facilitate this method of treatment.

Toilet Paper.—A sample of a new toilet paper, made by the British Patent Perforated Co., Limited, has been submitted to us. It is claimed for this paper that it is useful for the relief of hæmorrhoids, because it contains "nut-gall, witch-hazel, salicylic acid, and vaseline, to the amount of 20 per cent. of its weight." We are not of opinion that these medicinal agents incorporated with the paper are likely to have any very active effect on the mucous membrane of the rectum, and it would be very much against the sale of the paper if they did, as it would limit its use to those who suffered from such affections, and they would probably prefer more active medication. It does not appear to be sufficiently understood by manufacturers, that remedies are only useful when the conditions exist which render their application necessary. The vaseline is an undoubtedly useful ingredient because it renders the paper, which is of thin texture, very soft and resistant. It is a capital paper for its legitimate purpose.

Tritici Repentis (Liquor).—Messrs. Battley and Watts, whose various concentrated liquors are so valued by the profession, have added to their list a liquor of triticum repens, which is now being very largely used by some surgeons in the treatment of irritable bladder, and for cystitis. It is the least irritating of the remedies of its class, and as it is non-poisonous, it can be taken very freely. It is probable that the virtues of this remedy would be better recognized if we had had more reliable preparations of it for clinical use. The signature "Richard Battley" across the label of this bottle, is sufficient proof that it contains all the active properties of the plant.

NEW INVENTIONS.

Air Heel-Pad.—This is a small rubber cushion, easily inflated, and intended to be fitted on the heel of patients undergoing extension of the limb for fractures, etc. It is to obviate the pain and soreness of which such patients almost invariably complain, and is the invention

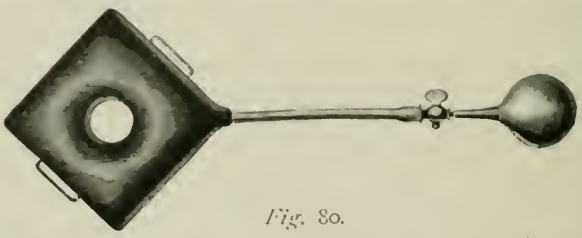


Fig. 80.

of Dr. Brunton, of Egremont. It appears to us that this pad may find many uses in surgical practice in preventing pressure upon any particular part, and that it is just one of those useful contrivances which we may be glad to have at any moment. Price 6s. 6d., of Messrs. R. Sumner & Co., Liverpool.

Fig. 81.

Albuminometer (Esbach's).—A ready means of making a quantitative analysis of albumen in urine, such as the practitioner can employ without the sacrifice of time, has long been wanted, and this result appears to be accomplished in a very satisfactory manner by Esbach's albuminometer (*Fig.* 81). The simplicity of operating with it can best be understood from the following directions:—

The urine is poured into a tube up to a certain mark; Esbach's reagent is then added up to another mark. The tube is then closed, and reversed a few times to allow the liquids to mix. After twenty-four hours, the height of the

coagulum is read off on a scale, which represents the quantity of dried albumen, by weight to 1000 parts of urine.

Nothing could be more simple and, except for urine which contains very small quantities of albumen, it is reliable. The cost of the albuminometer is only 2s. 6d., and we think that every practitioner should possess one. Messrs. R. Sumner & Co., of Liverpool, are the manufacturers, and also supply the reagent at 1s. 6d. per lb.

Aluminium for Surgical Appliances.—The use of aluminium for the manufacture of surgical appliances has everything to commend it, and so far as we have been able to discover, no disadvantages. The chief point is the extreme lightness of the appliances made from it; the second is that while they have all the brightness of plated silver, they are less liable to tarnish; and thirdly, we do not find that the cost to the purchaser is greater than that of appliances made in vulcanite or plated metals. Messrs. R. Sumner & Co., of Liverpool, who have taken a warm interest in this new branch of industry, send us a "Pus Tray" made in the new metal, and adapted to fit to any part of the body. It has all the appearance of solid silver, is extremely light, and forms a very elegant appliance. We see that the price of this is 4s. 6d. The same firm are now making a great number of appliances in this metal, and we cannot too strongly advise our readers to obtain a list of these before purchasing articles made in the older and less durable materials, which must now be considered out of date.

A New Bed-Pan.—This is the invention of Dr. Robert Mitchell, and consists essentially of a receptacle, the upper surface of which is an accurate mould of the living human buttocks and perinæum, being taken from a plaster of Paris mould of these parts of the living subject, in the supine attitude assumed when using the bed-pan; and a urinal, emptying into the receptacle, and united by its base and middle third with the anterior part of the receptacle; and so constructed and shaped that when the patient's buttocks are resting in the moulds for them on the receptacle, his penis is enclosed in the meatus of the urinal.

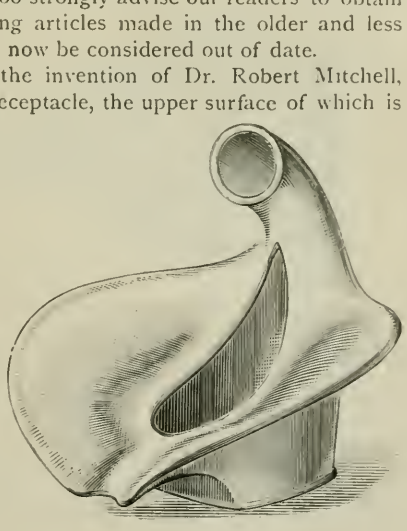


Fig. 82.

The purpose of the construction of this bed-pan is to prevent the occurrence of the pain, irritation, discomfort, excitement and injury frequently caused to patients, especially those who are debilitated and emaciated, on using the bed-pans in ordinary use.

We have tried it in hospital practice, and with very favourable results, and can commend it to the notice of our readers.

A New Axis Tractor.—This is the invention of Dr. Le Page, and has just been introduced by Messrs. R. Sumner & Co., of Liverpool. As shown in our illustration (*Figs.* 83, 84), it can be readily fitted to any ordinary forceps after their introduction, and removed when desired with

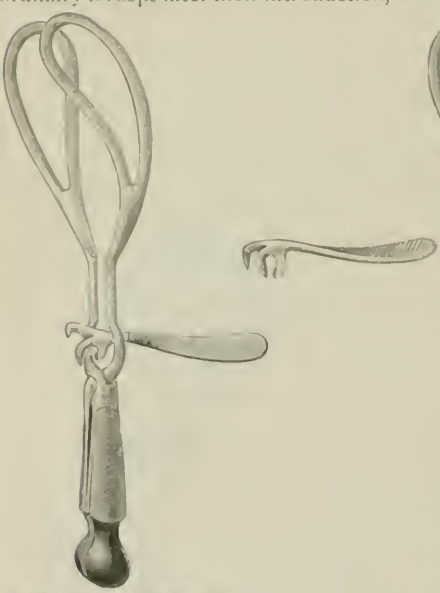


Fig. 83 represents the mode of application and of removal.

In *Fig.* 84 the Tractor is in position.

the greatest ease. Its advantage is that it permits of traction being exercised in any direction. We cannot speak too highly of the simplicity and the ingenuity of the invention, and Messrs. Sumner have carried it out in a manner worthy of the reputation of the firm. Its cost is small, and it occupies but a small space in the midwifery bag, and we think there will be few of our readers, who are engaged in obstetric practice, who will not avail themselves of such a ready and practical aid.

Antiseptic Dressing Scissors.—It is now almost *de rigueur* that scissors used for surgical purposes should have the blades separable for the purpose of cleansing. A specimen of these sent us by Messrs. R. Sumner & Co., of Liverpool, while they have the advantage of blades which are immediately separable, cut with a firmer grip than those of the ordinary kind. They can be sharpened as easily as an ordinary surgical knife. Their cost is 3s. 6d.

Cat-gut and Silk.—The various methods which have lately been devised for carrying cat-gut and surgical silk in an antiseptic solution, have met with much favour, but we have seen none so convenient as the little tubes designed by Dr. Vömel, which can be slipped into the waistcoat pocket, or even carried in a pocket surgical case. The cat-gut or silk is drawn through a small hole in the mouth of the tube, which is further secured when not in use by a screw-cap. Messrs. R. Sumner & Co., of Liverpool, are the agents for it.

Ear Syringe (Wright).—Messrs. C. Wright & Co., of 108, New Bond Street, London, have recently patented a new form of ear syringe, which is so arranged that even in untutored hands the stream will pass along the roof of the meatus, and return along its floor. This is provided for by a guard which, while it provides an outlet for the

Fig. 85.

return current, prevents the nozzle from being introduced too far into the ear ; it also lifts the nozzle into the proper position for injecting.

It is one of those simple inventions which is valuable because there is nothing complicated about it, and nothing which can get out of order. We have tried it carefully, and can cordially recommend it to our readers, both as regards its durability, cheapness (5/6), and efficiency.

Eustachian Catheter (Flexible).—This is one of the most ingenious of surgical instruments. Its merit consists in the fact that the curve at the end of the catheter is alterable after it has been introduced

through the nares, so that it may be adapted by the operator to meet any case. This is effected by the part of the catheter nearest the extremity consisting of a number of jointed rings, so arranged that they naturally have the fullest curve which is given to such instruments. A metal stylet placed in the body of the catheter will diminish this curve or increase it, as it is pushed forward or backward. The construction of the instrument renders the extremity flexible, and this assists its introduction. The workmanship, by which the spiral extremity possesses always a smooth surface, is worthy of the highest commendation. The manufacturers are Messrs. R. Sumner & Co., Liverpool.

A Flushing Curette.—This is made with a hollow stem, the distal extremity of which may be connected with an irrigating apparatus. A stream of water can thus be made to pass during the operation of curetting, which effectually washes away the *débris*. It is made both sharp and blunt, and has an advantage over the older form, which is sufficiently obvious. Not only can a stream of antiseptic fluid be passed during the operation, but, if necessary, the curette may be made the means of conveying a hæmostatic to the part operated upon. The cost is 8s. 6d., and the manufacturers are Messrs. R. Sumner & Co., Liverpool.

Ethyl-Chloride Spray.—The value of ethyl-chloride as an agent for the production of local anæsthesia has been fully referred to in the earlier part of this volume. Dr. Bengue has since invented a method for its application, which is greatly to be preferred to that we have already noticed. It consists essentially of a tube sufficient for about ten minor operations, and can be conveniently carried in the pocket. It only requires the screw-stopper to be removed and the heat of the hand to project a continuous spray upon the part. If the bottle is held a quarter of an inch from the part, anæsthesia is produced in about one minute, and will last for two minutes. If the part is treated for neuralgic pain the spray is held at a further distance, and simply played over the surface until the pain disappears. The cost of the appliance complete, in neat leather case, with sufficient ethyl-chloride for ten operations, is only 3/6, and we expect that there will be few of our readers who will not apply for one of them to Mr. B. Kuhn, of 36, St. Mary-at-Hill, Eastcheap, E.C., who has been appointed the British agent.

Throat Compress. The value of the throat compress in all inflammatory affections of the pharynx is steadily becoming recognized, and the fact that it is now a regular article of manufacture, instead of

being an extemporaneous production which does not always accomplish its purpose, emphasizes the greater importance now attached to it. The compress sent us by Messrs. E. Marriott & Co., of Hastings, is neat and comfortable, and from personal trial during a "relaxed throat," we can testify to its efficiency.

A Lens Measure.—This invention is of particular importance to oculists, because it enables the curve of any concave or convex glass to be accurately measured, and its focal power ascertained. The principle of the lens measure is to have two fixed points touching the lens, and a movable point between the two fixed ones that shall have a spring motion below to allow its being depressed when a lens is pressed on the three points until the lens comes up solid against the fixed points. The three points will then be on the arch of a circle giving the curvature of that lens. This movement by suitable mechanism is communicated to a hand which passes over a dial gauge to indicate the refraction of that surface of the lens. Full directions for the use of this instrument for different varieties of lens may be obtained on application to the manufacturers, Messrs. Botwright and Grey, 13, Spicer Street, Clerkenwell, London. E.C.

A New Hypodermic Syringe.—Messrs. Mayer & Meltzer, of Great Portland Street, have introduced and patented a hypodermic syringe, which is a very distinct improvement on those in ordinary use, and we should advise our readers to examine this instrument before purchasing any other. One of its distinct advantages is that it can be easily cleaned and sterilized. The needles are very fine, and are made of a special alloy, so that they can be passed through the flame of a little spirit lamp (which is enclosed in the box with the syringe) without injury or blunting the point. We notice that the wire passed through

Fig. 86.

the needles when not in use is a little thicker and stiffer than those ordinarily supplied, so that it can be placed *in situ* without difficulty. This is a small point, but it is of practical importance to the busy practitioner. Another very distinct advantage is that the end of the needle-mount plugs is inside of the syringe, so that the aperture is flush with the piston. This not only ensures accuracy of dose, but it enables every drop to be injected. This instrument does great credit

to Messrs. Mayer & Meltzer, and will be much appreciated by the profession.

Metal Handled Scalpels.—These have the advantage of being easily cleaned and maintained thoroughly aseptic, but we doubt if they will attain widespread popularity. The ordinary form of scalpel, in spite of the objections which may be brought against it by purists of the antiseptic school, has advantages in regard to lightness and finish which appears to us wanting in all the metal-handled scalpels we have examined. We would suggest to Messrs. Sumner and Co., of Liverpool, who furnish this sample, that they should make a scalpel having the ordinary steel blades fitted into an *aluminium* handle of the ordinary shape. But this would be more expensive than the scalpel before us, which costs only 1s. 6d.

Sim's Speculum.—This differs in no way from the instruments in ordinary use, except that it is made entirely of aluminium. The extreme lightness of this instrument caused us to weigh it against a silver-plated one of exactly the same size and shape in our possession. The result is as follows:—Ordinary silver-plated Sim's Speculum, 8½ ounces; Sumner's Aluminium Sim's Speculum, 2 ounces under. The instrument is perfectly rigid, and it is claimed that aluminium keeps its brightness, and wears better than plated silver. The cost is 8s. 6d., and the makers are R. Sumner and Co., Liverpool.

The Ideal Support.—This support consists of a simple pad, which may be applied to the rectum, or the vagina, as a means of support, and for any purpose where it is necessary to keep a surgical dressing in contact with these parts. Its advantage is in the fact that this pad is supported from the shoulders instead of the waist, and this by elastic bands, which permit of free movement of the body. These pads can be worn over the under garments or corsets. There is a band to go round the waist, which assists to keep the pad in position, but the whole support comes from the shoulders. It is very light, and we can recommend it, after a practical trial in two cases, as the most satisfactory support obtainable. It quite justifies its title of "Ideal." It costs 7s. 6d., and can be obtained of R. Sumner and Co., Liverpool.

New Tourniquet Fasteners.—Two new forms of fasteners, for use with india-rubber tourniquets, have lately been patented by Messrs. Down Bros., Instrument Makers, of St. Thomas's Street, London, S.E. They are known as Samway's clips, after Dr. Samways, of Guy's Hospital, the inventor. The simpler is shaped like an anchor, and is of about an inch in total length. It differs from an anchor in that the ring is oblong, with its long axis transverse to the shank, to which it

is rigidly fastened. There is no stock, and the free ends of the flukes are knobbed instead of spade-like. To apply the tourniquet the clip is held in one hand, and the stretched rubber is carried once, twice or thrice round the limb, then passed beneath one of the anchor flukes over the shanks, and back beneath the other fluke, and let go. The accompanying diagram illustrates the "Anchor Clip" Tourniquet when applied (*Fig.* 87). The second form of Dr. Samways' clip is made to resemble a grapnel, and has three flukes instead of two. The flukes are set at an angle of 120° to one another, and are slightly inclined towards the shank. The ends of two of the flukes are knobbed. The grapnel ring is oblong, as in the anchor clip model, and the rubber is similarly attached permanently to it. The ring, however, is not rigidly fixed to the shank. To apply the "Grapnel Tourniquet," the clip is held in one hand, with the two knobbed flukes pointing down towards the limb. The stretched rubber tubing is then carried once, twice, or thrice round the limb, passed beneath one of the knobbed flukes, over the shank and out beneath the other knobbed fluke, and let go. The fastening may be rendered still more secure if the rubber, instead of being led out beneath the second fluke, is passed as in the diagram, further round the shank, and brought up between the first fluke and the rubber (*Fig.* 88). The advantages claimed for these clips are : (1,) They are small and light ; (2,) They are simple, and cannot get out of order ; (3,) They are very quickly applied or removed ; (4,) The tighter the rubber is applied round the limb, the more securely the clip holds it : (5,) The clip does not cut the rubber ; (6,) The clip fastens equally well at any point along the length of the rubber. After careful practical tests we can highly commend them to the notice of our readers.

Fig. 87.

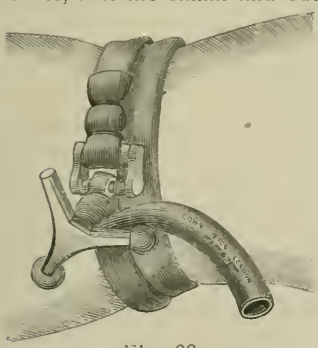


Fig. 88.

The Salmon and Ody Truss.—This is so well known to all of us, and our fathers before us, that it seems almost out of place to mention it in this section ; but it is not a little remarkable that in spite of all

the inventions which have been made in this particular department in all parts of the world, that this truss, which was patented in 1806, has a steadily increasing popularity among those who have either to wear or recommend trusses. Its principal advantages are the spring crossing from the opposite side, giving a greater length of flexible metal (consequently there are no short curves to touch the hips), and giving a direct pressure from the centre of the spine to the hernial ring. The front pad is fitted with a ball and socket, which allows for

Fig. 89.

Fig. 90.

every position of the trunk, whether walking, stooping or riding, every movement being followed with ease and security, while it still retains its direct pressure. Among its many advantages is, that no straps, or perineal band, are required. It is well suited for use after operations for radical cure, as the front pad is oval, and only slightly concave, which allows it to adapt itself to the required position, and does not unduly press into the wound and cause irritation, so frequently the case with the circular spring and pear-shaped pad trusses.

MISCELLANEOUS.

The Arctic Ulster.—This is the name given to an ulster overcoat by Mr. J. M. M'Alery, of Belfast. It is especially designed to meet the needs of medical men during inclement weather, and we may safely say that when wrapped in one of these useful garments, the wearer is more efficiently protected against wind, cold, and rain than is the case with most of the outer garments in use. The ulster is well supplied with pockets, and these also are designed to meet medical necessities. Those of our friends who have purchased this garment speak highly in praise of it.

A Screw-stoppered Medicine Bottle.—This is a novelty sent us by Messrs. Kilner Bros., the well-known manufacturers of glass bottles (King's Cross, London, N.). The screw-stopper saves a great deal of trouble and time to those who dispense their own medicines, and adds to the convenience of patients. The material used for the stopper does not appear to be affected by chemical agents, and can be safely recommended for use.

Carriages for Removal of Invalids.—It may be convenient to our readers to know that Messrs. H. & J. Reading, of 14 and 15, Riding House Street, Langham Place, W., supply carriages for the removal of invalids, by rail or road, on hire.

These carriages are furnished with every convenience. The back of the vehicle is made to open so that the invalid couch can be carried from the patient's room, put into the carriage, and the patient need not move until the completion of the journey. When this includes travelling by rail, the carriage is put on to an ordinary truck, without the necessity of any change on the part of the patient. The firm also supply experienced attendants to conduct the removal. They do *not* convey infectious cases.

Knitted-wool Corsets.—We have a special fondness for recommending knitted-wool under-garments for our lady patients. They combine the maximum of warmth with lightness; they afford no check to the natural perspiration; and, by their elasticity, they fit closely to the figure. We have been glad, therefore, to have samples of the various knitted-wool materials, manufactured by the Sanitary Knitted Corset Co., 44, Mansfield Road, Nottingham, and we have preserved them for the information of our patients. They send us also a sample of their knitted-wool corset, which, instead of being shaped to the figure, takes its shape from the figure of the wearer. It is extremely light and elastic, and although not made so as to force the body into a preconceived shape, is well adapted for those who require a light and flexible support. To such patients they will yield a degree of comfort, unknown to those who wear the ordinary combination of steel and whale-bone.

The Platinum Corset.—This was favourably mentioned in our last issue, and we only refer to it here to mention a few very decided improvements: (1,) The platinum steels have been covered, which prevents them from rusting; (2,) Instead of the buttons down the front, they now fasten like the ordinary corset; (3,) Arrangements have been made by which ladies can be fitted and the corsets adapted to precisely meet the patient's figure.

We have given these corsets a careful investigation during the year, and these changes are, we believe, directly due to the experience thus obtained. The fact that the platinum steels can be readily taken out and the corsets sent to the wash as frequently as any other garment, commends them to us, quite as much as the fact that the weight of corset and underclothing is borne by the shoulders.

The British Stylographic Pen.—This is a well-constructed pen,

and less expensive than some others. If we, ourselves, confess to a personal preference for a gold-nib which preserves the characteristics of the hand-writing, we are aware that many of our professional friends still hold by the stylos—to all such this pen may be recommended as cheaper, and excellent of its kind.

Screw Stopper Inkstand (Darke's Patent).—In the same connection we are pleased to notice favourably a new pattern patent glass inkstand, which Mr. E. Darke, 2, Pall Mall, East, has sent us. The ink in the well is entirely controlled by a porcelain screw stopper, pierced with a hole, through which the ink is forced in a small quantity only, by screwing the stopper downwards through a rubber collar. This collar is perfectly ink-tight, and the result is a continuous supply of just enough fresh ink to feed the pens dipped into it. The cost is slight, being from 2s. and 3s. each, post free. We have had it in use for some time, and find it excellent, and cleanly in operation, in fact, the best we have tried. The whole thing will come apart for cleaning, when necessary, without any difficulty—a great improvement upon the older forms of well inkstands, and if at any time it should be upset, only the small quantity of ink contained in the stopper can escape. We believe most stationers now keep it.

The Remington Type-writer.—We are glad to notice some improvements which have been recently made in this renowned writing-machine. The marginal stop collar has now no attached part that can become loosened by the working of the machine. The thumb screw has been discarded for a spring. The rod on which the stop collar slides is notched to correspond with the divisions of the scale, so that it can be adjusted instantly for any desired width, and is always certain in its action. Perhaps the greatest improvement is the change key. This key is slightly enlarged, fitting the finger perfectly, and by the improved leverage less force is required to depress it, thus making it possible to utilize the little finger for operating this key. By a very clever device the one change key answers for both upper and lower keys. This adds greatly to the speed and usefulness of the machine, and there are other minor improvements which all tend to facilitate rapid operation and to decrease the noise.

The Yost Type-writer.—This machine has been in use in the editorial department of the "Medical Annual" during the past six months. It has not caused us an instant's delay by getting out of order, and the ink-pads supplied with the machine have not at present required even re-inking. Those who have had experience of the "ink-ribbon" machines will appreciate this. We find that, however

quickly the instrument is used, there is no danger of defective alignment or bad spacing of letters. The only chance of going wrong is when the finger strikes between the keys instead of upon them, and depresses two at once; even then, the result is that neither strike, so that no mark is made upon the paper. The construction of the machine renders it difficult to make mistakes, and when they *are* made, they are easily corrected. One advantage, which we appreciate, is that any kind of paper may be used, so that we are not restricted to that thin, but expensive paper, which we are accustomed to associate with type-written letters. We can cordially recommend this machine to our readers.

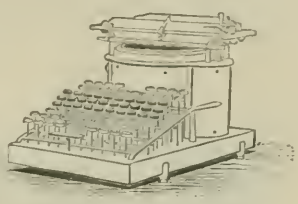


Fig. 91.

The "Biltor" Hygienic Pipe.—Yet another tobacco pipe, made upon scientific principles, has been sent us for examination. To outward appearance the same as other pipes—the hygienic principle is different, and seems sound and simple. The stem is hollowed to admit the patent cartridge, which, constructed of absorbent filtering material, completely fills the stem and thoroughly filters and purifies the smoke, all of which is compelled to pass through it. This advantage, so far as we can judge, is brought about without appreciably affecting the draught of the pipe or the flavour of the tobacco. We find the cartridges require changing after two or three smokings, for they then become impregnated with the injurious products from the tobacco: but this only occupies a moment, and the cost being trifling, this little trouble is insignificant compared with the undoubted advantages of a pipe that requires no cleaning, extracts the injurious properties of the tobacco, and can be smoked until it is empty. The "Biltor" Co., 14, Holborn Bars, London, are the manufacturers.

New Rheostat.—The Electro-Medical Apparatus Company, of Trafalgar Chambers, 36, St. Martin's Lane, London, W.C., have brought out a new form of rheostat (called the "L.K."), possessing the extensive controlling range of from 50 to a million ohms. By its use therapeutic currents may be regulated with steady graduation, and entire absence of shock even when taken direct from electric light mains. It is claimed that with one of these L.K. rheostats in circuit, the electro-therapist may obtain without change of instruments half a milliampère (as for head treatment), or several hundred milliampères (as for a dipolar bath).

Portable Accumulators.—We have had brought to our notice a very handy accumulator, sent out by Messrs. A. Hurst & Co., 6, Fowkes Buildings, Great Tower Street, London. They are supplied in neat mahogany cases with nickel fittings, with or without suitable resistances, either singly or in sets, at a moderate price. These instruments possess some undoubted advantages over the bichromate cells for lighting and cautery work, and one weighing only a few pounds will keep a small electric lamp, such as would be required for laryngoscopic or other examinations, at work for several hours, for which its portability is very convenient. The E. M. F. (2 volts) of the accumulator is nearly constant from beginning to end, the amount of light or heat being thus practically the same so long as it lasts, another material advantage, which, however, brings with it a danger, lest the operator, having failed to note the amount of work done since last charging the appliance, should find himself suddenly bereft of his power, for they give out without warning. The expense, however, of recharging is but trifling, and it is safest to have this done not less than once every three months, whether the instrument has been in use or not. These reasons somewhat discount their advantages to those living in the country, where transit is difficult for the purpose of recharging ; but for busy practitioners, within easy reach of large towns, they will be found most convenient, and can be recommended.

Fig. 92.

Lunatic and Idiot Asylums and Homes for Inebriates in Great Britain and Ireland.

We are very anxious to make this list complete, and to give all necessary information; but unless our circular of enquiry—*which in every case is stamped for reply*—is promptly returned, we cannot undertake the responsibility of inserting particulars of an Establishment which may have been closed.

ABERDEEN.—*Royal Asylum.* Res. Med. Sup., Wm. Reid., M.D.; Treasurer, Wm. Carnie, 27, Exchange Street.

ABERGAVENNY.—*Joint Counties Asylum.* Med. Sup., James Glendinning, M.D. Access—G.W.R. Station, ½ mile; L. and N.W. Station, ¾ mile.

ALTON (Hants).—*Westbrook House.* Prop., Mrs. E. J. Burnett.

ANDOVER (near).—*Fyfield* (for ladies). Med. Prop., W. J. H. Lush, M.D.

ANTRIM.—*Glenside House.* Med. Prop., Dr. Graham.

ARGYLL and BUTE.—*District Asylum*, Lochgilphead. Res. Med. Sup., J. Cameron, M.D. Access—Rail to Greenock, thence by Steamer to Ardrishaig, 2½ miles distant.

ARMAGH.—*Course Lodge*, Richhill, 5 miles from Armagh (for ladies only). Proprietors, James and Wm. Orr; Visiting Physician, Dr. Riggs. Access—Richhill Station, thence by own Conveyance, 2 miles.

District Asylum. Res. Med. Sup., Dr. W. Graham.

The Retreat. Proprietor, Mr. A. D. Allen. (For 20 male and 15 female patients, middle class.) Access—Richhill, thence cab 1½ miles.

AYR.—*District Asylum.* Res. Med. Sup., C. H. Skae, M.D. Access—Ayr Station, 2 miles.

BALLINASLOE (Co. Galway).—*District Lunatic Asylum.* Res. Med. Sup., R. V. Fletcher, M.D. Access—Ballinasloe.

BANFF.—*District Asylum*, Ladysbridge. Res. Sup, David Fowler. Visiting Physician, Wm. Ferguson, M.D. Access—Ladysbridge Station.

BARNOLDSWICK (Yorkshire).—*Greta Bank.* Prop., Mrs. Parker. Med. Sup., Dr. Bradley. Access—Bentham Station, 2 miles.

BASCHURCH (Shropshire).—*Borcatton Park*, 10 miles from Shrewsbury. Res. Med. Sup., Dr. Sankey. Access—Baschurch Station.

BATH.—*Bailbrook House*. Prop. and Res. Med. Sup., Lionel A. Weatherly, M.D. Access—Bath, 15 minutes' drive. *See page 709.*

BECKENHAM (Kent).—*Springcroft*. Prop., Mrs. Stilwell.

BEDFORD.—*Bishopstone House*, Ashburham road (for 10 females). Prop. and Med. Sup., Wm. Simpson Craig, M.D. Access—Bedford. *See page 712.*

Springfield House Asylum; 1 hour from London. Res. Med. Sup., D. Bower, M.D. Access—Bedford, 1½ mile.

BELFAST.—*Belfast District Lunatic Asylum*. Res. Med. Sup., A. S. Merrick, M.D.

BEVERLEY.—*East Riding County Asylum*. Res. Med. Sup., M. D. Macleod, M.B. Access—Beverley Station, 2 miles.

BIRMINGHAM.—*Birmingham City Asylum*, Winson Green. Res. Med. Sup., E. B. Whitcombe. Access—Winson Green, ½ mile, Soho, ¼ mile.

BODMIN.—*Cornwall County Asylum*. Med. Sup., Dr. R. Adams.

BOX (Wilts).—*Kingsdown House*, 5 miles from Bath. Prop., Mrs. E. A. Nash; Res. Med. Sup., Dr. H. C. MacBryan. Access—Box.

BRENTWOOD.—*Essex County Asylum*. Med. Sup., Dr. G. Amsden.

BRIDGEND.—*Glamorgan County Asylum*. Res. Med. Sup., H. T. Pringle, M.D. Access—Bridgend, 1½ miles.

BRISTOL.—*Brislington House*, 2½ miles from Bristol. Res. Med. Sups., Drs. C. H. and B. B. Fox.

City and County Asylum. Med. Sup., Harry A. Benham, M.D.

Northwoods House, Winterbourne, 7 miles from Bristol. Props., Reginald Eager, M.D., and T. G. Seymour. Access—Cab from Bristol, or from Fishponds, Yate, or Patchway Stations. *See page 712.*

BRITON FERRY (Glamorgan).—*Vernon House*, near Neath and Swansea. Med. Sup., C. Pegge. Access—Briton Ferry Station, 3 minutes' walk.

BROMSGROVE.—*Birmingham City Asylum*, Rubery Hill, near Bromsgrove. Res. Med. Sup., A. C. Suffern, M.D. Access—Rubery Station.

BURGESS HILL.—*St. George's Retreat*, Ditchling. Res. Med. Off., Dr. John A. Cones. Access—Burgess Hill Station.

BUXTON.—*Wye House*. Res. Phys., F. K. Dickson, F.R.C.P. Access—Buxton.

CAMBRIDGE.—*County Asylum*, Fulbourn. Res. Med. Sup., E. C. Rogers, M.R.C.S. Access—Cambridge, 3 miles.

CANE HILL, Purley (Surrey).—*London County Asylum.* Res. Med. Sup., Dr. J. M. Moody. Access—Coulsdon Station.

CARLISLE.—*County Asylum.* Res. Med. Sup., J. A. Campbell, M.D. Access—Carlisle, 3 miles.

CARLOW.—*District Asylum.* Res. Med. Sup., Dr. T. P. O'Meara.

CARMARTHEN.—*Joint Counties Asylum.* Med. Sup., G. J. Hearder, M.D. Access—Carmarthen, 2 miles.

CHARTHAM (Near Canterbury).—*Kent County Asylum.* Res. Med. Sup., Dr. G. C. Fitzgerald. Access—Chartham Station, 1 mile.

CHEADLE.—*Manchester Royal Lunatic Hospital.* Res. Med. Sup. G. W. Mould, M.R.C.S.

CHESTER.—*Cheshire County Asylum.* Med. Sup., J. H. Davidson, M.D.

CHURCH STRETTON.—*Stretton House*, Shrewsbury (for gentlemen). Med. Sup., Dr. H. Barnett. Access—Church Stretton Station, 10 minutes' walk. *See page* 707.

The Grove House (for ladies). Res. Prop., Mrs. McLintock.

COLCHESTER.—*Eastern Counties Idiot Asylum.* Res. Med. Attend., F. W. Hall, M.D., B.Sc. Lond.; Res. Sup. and Sec., John J. C. Turner. Payment cases received from all parts. Election cases only from Eastern Counties.

CORK.—*District Asylum.* Res. Med. Sup., Oscar Woods, M.D. Access—Cork, 1 mile.

Lindville. Med. Prop., Dr. J. Osborne.

CUPAR (Fifeshire).—*Fife and Kinross District Asylum.* Med. Sup., A. R. Turnbull, M.B.

DARLINGTON (Durham).—*Dinsdale Park.* Med. Sup., J. W. Eastwood, M.D., J.P.

DARTFORD.—*City of London Asylum*, Stone. Res. Med. Sup., Dr. E. W. White. Access—S.E.R., Dartford, 1 mile.

DENBIGH (North Wales).—*North Wales Counties Lunatic Asylum.* Med. Sup., Dr. Llewelyn F. Cox. Access—Denbigh, 1 mile.

DERBY.—*Borough Asylum*, Rowditch. Res. Med. Sup., Dr. Macphail. Access—Great Northern Station, 1 mile; Mid., 2 miles.

County Asylum, Mickleover. Res. Med. Sup., Dr. Lindsay. Access—Derby, 5 miles, Mickleover, 2 miles.

DEVIZES.—*Wilts County Asylum.* Res. Med. Sup., John Ireland Bowes, M.R.C.S. Access—Devizes, 1 mile.

DORCHESTER.—*Dorset County Asylum.* Med. Sup., P. W. MacDonald, M.D. Access—Dorchester, 3 miles.

DOWNPATRICK.—*District Asylum.* Res. Med. Sup., G. St. George Tyner, F.R.C.S.

DRUMCONDRA (Co. Dublin).—*Hartfield Retreat.* Med. Prop., Dr. Lynch. Access—Dublin, 2 miles.

Highfield (for ladies). *Hampstead* (for gentlemen). Med. Prop., John Eustace, M.D.

DUBLIN.—*Bloomfield Retreat*, Donnybrook Road.

Farnham House and Maryville, 3 miles from Dublin (for 56 patients, both sexes). Prop. and Res. Med. Sup., A. Patton, M.B. Access—Cab from Dublin.

House of St. John of God, Stillorgan. Access—Stillorgan Station, ¼ mile. From Dublin 5 miles.

Richmond District Asylum. Res. Med. Sup., Dr. C. Norman.

Woodbine Lodge, Bathfarnam, 6 miles (ladies). Prop., Mrs. Hayes.

DUDLEY (Stafford).—*Ashwood House*, Kingswinford, Props., Drs. Peacock & Pietersen. Access—Stourbridge Junction, 3 miles, or Dudley Station, 4 miles.

DUMFRIES.—*Crichton Royal Institution.* Med. Sup., James Rutherford, M.D., F.R.C.P., E., etc.

DUNDEE.—*Royal Asylum*, West Green. Res. Med. Sup., James Rorie, M.D. Access—Dundee, 3 miles; Liff, 1½ miles.

DURHAM.—*County Asylum*, near Durham. Res. Med. Sup., Robert Smith, M.D. Access—Sedgefield Station, 3 miles, thence by 'Bus.

EARLSWOOD.—*Asylum for Idiots.* Res. Med. Sup., Dr. Robert Jones. Males 400, females 200. Admission by election or payment of 50 to 200 guineas per annum. Apply to Sec., 36, King William Street, London Bridge, E.C. Access—Earlswood Station, close to the Asylum; Red Hill Junction, 1½ miles.

EDINBURGH.—*Mavisbank House*, Polton, Midlothian. Res. Med. Sup., John Keay, M.D., M.R.C.P., E. Access—Polton Station, North British Railway, 5 minutes' walk.

Midlothian and Peebles District Asylum. Res. Med. Sup., R. B. Mitchell, M.D. Access—Rosslynlee Station, 1 mile.

Mollendo House, Musselburgh. Prop., P. Mackenzie. Cons. Phys., Thos. R. Scott, M.D. Access—Musselburgh Station, 10 minutes' walk.

Royal Edinburgh Asylum, Morningside. Phys. Sup., T. S. Clouston, M.D., F.R.C.P., E.

Saughton Hall. Res. Med. Sup. and Prop., Dr. John Batty Tuke, M.D., F.R.C.P., E. Access—Gorgie Station, 15 minutes.

ELGIN.—*District Asylum.* Med. Sup., J. W. N. Mackay, M.D.

ENNIS.—*District Asylum.* Res. Med. Sup., Richard Phillips Gelston, L.R.C.S., I., L.R.C.P., I. Access—Ennis Station, 1¾ miles.

ENNISCORTHY (Co. Wexford).—*District Lunatic Asylum.* Res. Med. Sup., Thomas Drapes, M.B. Access—Enniscorthy, 1 mile.

EPSOM (Surrey).—*Church Street* (for 14 ladies). Res. Med. Sup., Dr. W. Clement Daniel. Access—Epsom Station, 5 minutes' walk.

See page 710.

EXETER.—*City Asylum*, Heavitree. Res. Med. Sup., R. L. Rutherford, M.D. Access—Exeter, L. and S.W.R., 3 miles; G.W.R., 4 miles.

Court Hall, Kenton. Prop., Mr. Mules. Access—Starcross, 1 mile.

Devon County Asylum, Exminster. Med. Sup., G. Symes Saunders, M.D. Access—Exminster Station, 1 mile; Exeter, 4 miles.

Wonford House (Hospital for the Insane). Res. Med. Sup., P. Maury Deas, M.B., M.S. Lond. Access—Exeter Station (Queen Street), 1½ miles; (St. David's), 2 miles. *See page* 714.

FAIRFORD (Gloucestershire).—*Fairford Retreat.* Res. Med. Prop., Daniel Iles, M.R.C.S. Access—Fairford Station. *See page* 713.

The Croft House, near Swindon and Cirencester. Med. Sup., Dr. C. H. Bloxsome. Access—Fairford Station.

GATESHEAD.—*Dunston Lodge Asylum*, Newcastle and Gateshead. Prop., Mr. W. Garbutt. Access—Newcastle-on-Tyne Station, 3 miles.

GLASGOW.—*District Asylum.* Med. Sup., A. C. Clark, M.D.

Royal Asylum, Gartnavel. Res. Phy. Sup., D. Yellowlees, M.D., LL.D.

GLOUCESTER.—*Barnwood House.* Res. Med. Sup., J. G. Soutar, M.B., C.M., M.D. Access—Gloucester, 2 miles. *See page* 711.

Gloucester County Lunatic Asylums, Wotton and Barnwood, Gloucester. Res. Med. Sup., F. Hurst Craddock, B.A. Oxon, M.R.C.S. Access—Gloucester Station, 1 mile. *See page* 713.

GOUDHURST (Kent).—*Tattlebury House* (for 6 males and 2 females). Med. Sup. and Prop., R. S. Newington, M.R.C.S., L.S.A. Access—Marden Station, 5 miles.

GREAT YARMOUTH.—*Royal Naval Hospital.* Dr. Thomas Browne, R.N., Fleet Surgeon in charge. Access—Great Yarmouth Station, ½ mile. For Naval patients only, admitted by Admiralty order.

HADDINGTON.—*District Asylum*, 17 miles from Edinburgh. Med. Sup., J. Bruce-Ronaldson, F.R.C.S., E., etc. Access—Haddington Station, 10 minutes' walk.

HARPENDEN (Herts.)—*Harpenden Hall*, 4 miles from St. Alban's (for 13 ladies). Prop. and Res. Med. Sup., A. Maclean, L.R.C.S. Ed., L.S.A. Lond. Access—Harpenden Station. *See page* 711.

HATTON (near Warwick).—*County Asylum.* Res. Med. Sup., Alfred Miller, M.B. Access—Hatton Station, 2 miles; Warwick Station, 3 miles.

HAYWARD'S HEATH.—*Sussex County Asylum.* Res. Med. Sup., C. E. Saunders, M.D. Access—Hayward's Heath Station, 1½ miles.

HENLEY-IN-ARDEN (Warwickshire).—*Glendossil* (for both sexes). Res. Prop., Dr. S. H. Agar. Access—Great Western Railway.

HEREFORD.—*County and City Asylum.* Med. Sup., T. A. Chapman, M.D.

HITCHIN (Herts), near.—*Three Counties Asylum.* Res. Med. Sup., E. Swain, L.R.C.P. Access—Three Counties Station, 1 mile.

HULL.—*Borough Asylum.* Med. Sup., J. Merson, M.D. Access—Willerby Station, 1 mile.

Craven Street Retreat, Sculcoates. Prop., J. Brown. Access—Hull, 1 mile.

INVERNESS.—*District Asylum.* Med. Sup., Thos. Aitken, M.D. Access—Inverness, 2½ miles.

IPSWICH.—*Borough Asylum.* Med. Sup., Dr. E. L. Rowe. Access—Ipswich, 2 miles.

ISLE OF MAN.—*Lunatic Asylum*, Union Mills. Med. Sup., W. Richardson, M.D. Access—Douglas, 3 miles.

ISLEWORTH (Middlesex).—*Wyke House.* Res. Prop., Dr. F. Murchison. Access—Isleworth, Brentford, and Osterley Stations, 1 mile.

IVYBRIDGE (Blackadon).—*Borough Asylum.* Med. Sup., Dr. A. N. Davis.

JERSEY.—*The Grove.* Prop., Dr. Francis Neel Gaudin, M.P.C., M.R.C.S. Eng. Res. Med. Sup., Chas. Caldecott, M.B., B.Sc. Lond. M.R.C.S. ½ mile from St. Heliers, 2 from St. Aubin's. Access—G.W.R., *via* Weymouth, 4½ hours rail from London, and 5 hours sea passage; per L. and S.W.R., *via* Southampton, 2 hours rail and 8 hours sea passage. *See page* 708.

KILKENNY.—*District Asylum.* Res. Med. Sup., Dr. Wm. Z. Myles.

KILLARNEY.—*District Asylum.* Res. Med. Sup., Dr. L. T. Griffin.

KINGSTON-ON-THAMES.—*Canbury House.* Prop., W. H. Roots, M.R.C.S.

KNOWLE (near Fareham).—*County Asylum.* Med. Sup., T. B. Worthington, M.D.

LANCASTER.—*County Asylum.* Res. Med. Sup., David M. Cassidy, M.D., D.Sc. Access—Lancaster Station.

LEEDS (near Menston). *West Riding Asylum.* Res. Med. Sup., Dr. McDowall. Access—Guiseley Station.

LEICESTER.—*Borough Asylum.* Med. Sup., J. E. M. Finch, M.D.

Leicestershire and Rutland Asylum. Res. Med. Sup., Dr. W. H. Higgins.

LETTERKENNY and LONDONDERRY.—*Donegal District Asylum.* Res. Med. Sup., Edward E. Moore, M.D. Access—Letterkenny and Lough Swilley Railway, ½ mile.

LEYTON (Essex).—*The Great House.* Prop., Mrs. Davey.

LICHFIELD.—*County Lunatic Asylum*, Burntwood, near Lichfield. Res. Med. Sup., James Beveridge Spence, M.D. Access—Lichfield City Station, 3½ miles; Trent Valley Station, 4½ miles; Hammerwich, 1½ mile.

LIMERICK.—*District Asylum.* Res. Med. Sup., Dr. E. D. O'Neill.

LINCOLN.—*County Asylum*, Bracebridge. Med. Sup., J. W. Marsh, M.R.C.S.

The Lawn. Res. Med. Sup., Arthur P. Russell, M.B. Access—Lincoln Station, 1 mile.

LIVERPOOL.—*Shaftesbury House.* Near Liverpool and Southport. Res. Med. Sup., Stanley A. Gill, B.A., M.D., M.R.C.P.Lond. Access—Formby Station, ¼ mile distant. *See page* 706.

Tue Brook Villa, 3 miles from Liverpool. Res. Med. Sup., Geo. Duffus, M.B. (For 52 males and females.) Access—Tue Brook Station.

LONDON.—*Bethlem Royal Hospital*, St. George's Road, London, S.E. Res. Med. Sup., R. Percy Smith, M.D., F.R.C.P. *See page* 714.

Bethnal House, Cambridge Road, N.E. Res. Med. Sup., J. Kennedy. Will, M.D. Access—Railway Station near East London Museum.

Brooke House, Clapton. Props., Mr. H. T. Monro and Dr. J. O. Adams; Res. Med. Sup., Dr. J. O. Adams. Access—Clapton Station.

Camberwell House, S.E. Prop. J. H. Paul, M.D. Res. Med. Sup., Frank Schofield, M.D.

Chiswick House, Chiswick, and 37, Albemarle St., W. Res. Lics., Thos. Seymour Tuke, M.A., M.B., and C. M. Tuke, M.R.C.S. Access—Chiswick Station, ¾ mile; Turnham Green Station, ⅓ mile.

County Asylum, Colney Hatch, N. Med. Sup., W. J. Seward, M.B.

Featherstone Hall, Southall. Med. Lic., Miss H. E. Dixon.

Flower House, Catford Bridge, S.E. Res. Med. Sup., C. A. Mercier, M.B. Access—C. and D. Rly., Beckenham Junc., 1 mile.

Goudhurst, Stanley Road, Teddington. Med. Sup., Dr. R. A. Clarke.

Grove Hall, Bow (both sexes). Med. Lics., Mr. Byas and Dr. Mickle. Access—Bow Road and Bow Stations, ⅓ mile.

Halliford House, Sunbury-on-Thames, S.W. Res. Med. Sup., W. J. H. Haslett. Access—Sunbury Station, 1¼ mile.

Hayes, Wood End House (ladies). Uxbridge, 3 miles, London, 12 miles. Med. Lic., Dr. H. Stilwell. Access—Hayes Station, 1 mile.

Hayes Park, Hayes, Middlesex, near Uxbridge. Res. Med. Sup., H. F. Winslow, M.D. Access—Hayes Station, 2 miles.

Hendon Grove Asylum, Hendon, Middlesex. Res. Med. Lic., H. Hicks, M.D. Access—By Mid. Rly., Hendon Station, ½ mile, or Bus from Swiss Cottage, St. John's Wood, N.W.

Homelea, Hammersmith, W. Prop., Mrs. Buck.

Hoxton House, London, N. Res. Med. Sup., John F. Woods. Access—Shoreditch Station, two minutes' walk; Liverpool Street Station, ten minutes' walk.

London County Asylum, Hanwell, W. Res. Med. Sup., R. R. Alexander, M.D.

Middlesex County Asylum, Banstead, S.E. Res. Med. Sup., T. C. Shaw, M.D. Access—Belmont Station, ½ mile; Sutton Station, 1½ mile.

Middlesex County Asylum, Tooting, S.W. Med. Sup., H. G. Hill, M.R.C.S. Access—Wandsworth Common Station, 1 mile.

Moorcroft House, Hillingdon (males). Uxbridge, 2 miles, London, 13 miles. Med. Lic., Dr. Stilwell. Access—West Drayton Stat., 2 miles.

Munster House, Fulham. Props., G. F. Blandford, M.D. and C. F. Williams.

Newlands House, Tooting, Bec Road, S.W. Prop., Dr. H. Sutherland. Res. Med. Supt., E. T. Hall, M.R.C.S.

Northumberland House, Green Lanes, N. Prop., A. H. Stocker, M.D. Access—Finsbury Park Station.

Otto House, 47, North End Road, Hammersmith, W. Med. Sup., Dr. H. Sutherland. Access—West Kensington Station, ¼ mile.

Peckham House, Peckham, S.E. Prop., Alonzo H. Stocker, M.D. Med. Sup., John Warnock, M.D. Access—Peckham Rye Station, 10 minutes' walk. *See page* 713.

Peterborough House, Fulham. Res. Med. Sup., James Robt. Hill, Access—Parsons' Green or Chelsea Station, 5 minutes' walk.

Royal Indian Asylum, Ealing, W. Res. Med. Sup., Thos. B. Christie, M.D. Access—Ealing Station, 1 mile; Ealing Common Stat., ½ mile.

Silverton House, Peckham Rye. Prop., Mrs. A. G. Preston.

St. Luke's Hospital, Old Street, E.C. Med. Sup., G. Mickley, M.B.

Sutherland House, Surbiton, near Kingston-on-Thames (ladies). Res. Med. Sups., Robt. Collum, M.D., M.R.C.P., Lond., and A. T. Collum, L.R.C.P., M.D., M.R.C.P., Lond., F.R.C.S., Eng. Access—Surbiton, ¼ mile.

The Huguenots, East Hill, Wandsworth, S.W. (ladies). Prop., Miss Leech. Access—Clapham Junction Station.

The Priory, Roehampton, S.W., near Richmond. Res. Med. Sup., James Chambers, M.D. Access—Barnes Station, 8 minutes' walk.

The Shrubbery, Southall (females). Prop., Miss H. J. Rosser. Access—Southall Station, ¼ mile.

Vine Cottage, Norwood Green, Southall. Props., Mrs. Chalk and Mrs. Oliver. Med. Sup., Dr. Thornton. Access—Southall Station, 1 mile.

LONDONDERRY.—*District Asylum.* Res. Med. Sup., Dr. Hetherington.

MACCLESFIELD.—*Parkside Asylum.* Res. Med. Sup., T. Steele Sheldon, M.B. Lond. Access—Macclesfield Station, 1 mile.

MAIDSTONE.—*Kent County Asylum.* Res. Med. Sup., F. Pritchard Davies, M.D. Access—Maidstone Station, 1½ miles.

West Malling Place (for ladies). *Castle House* and *Winthies Cottage* (for gentlemen). Res. Med. Sup., Dr. James Adam. Access—Malling Station, 1 mile.

MARKET LAVINGTON (Wilts).—*Fiddington House.* Prop. and Res. Med. Sup., C. Hitchcock, M.D. Access—Devizes Station, 6 miles. *See page* 712.

MELROSE, N.B.—*Roxburgh District Asylum.* Res. Med. Sup., J. C. Johnstone, M.D. Access—Melrose, 1 mile.

MELTON.—*Suffolk County Asylum*, Melton, near Woodbridge. Res. Phys. and Sup., Wilson Eager, L.R.C.P. Access—Melton Station, 1¼ mile; Woodbridge Station, 2¼ miles.

MONAGHAN (Ireland).—*District Asylum*, Res. Med. Sup., Dr Edward Taylor. Access—Monaghan, ¼ mile.

MONTROSE, N.B.—*Montrose Royal Lunatic Asylum.* Res. Med. Sup., J. C. Howden, M.D. Access—Hillside Station, ¼ mile; Dubton Station, 1 mile.

MORPETH. *Northumberland County Asylum.* Res. Med. Sup., Thos. W. McDowall, M.D. Access—Morpeth Station, 1 mile, by ²Bus.

MOULSFORD (Berks).—*Berks County Asylum.* Med. Sup., J. W. A. Murdoch, M.B.

MULLINGAR.—*District Asylum.* Res. Med. Sup., Dr. A. D. O. Finegan.

NELSON-IN-MARSDEN (Lanc.).—*Marsden Hall* (for both sexes). Res. Prop., Mrs. Bennett; Med. Sup., Dr. A. P. Millar. Access—Nelson or Colne Stations. *See page* 714.

NEWCASTLE-ON-TYNE.—*City County Asylum*, Gosforth. Res. Med. Sup., Jas. Thomas Callcott, M.D. Access—Newcastle, 1 mile.

NEWTON-LE-WILLOWS.—*Haydock Lodge.* Med. Prop., E. H. Beaman, M.R.C.S., E.; Res. Med. Sup., Dr. C. T. Street. Access—Newton-le-Willows Station, 2 miles.

Berrywood Asylum. Res. Med. Sup., Dr. R. Greene. Access—Castle Station, 2 miles: Midland Station, 2½ miles.

St. Andrew's Hospital. Med. Sup., J. Bayley, M.R.C.S.

NORWICH.—*Heigham Hall.* Proprietress, Mrs. Watson. Res. Med. Sup., Thos. J. Compton, M.D.

Norfolk County Asylum, Thorpe. 800 Beds. Res. Med. Sup., David G. Thomson, M.D. Access—Norwich (Thorpe) Station, 2½ miles.

Norwich City Asylum, Hellesdon. Res. Phys. and Sup., Dr. Wm. Harris, F.R.C.S.; Hon. Con. Phys., Sir Frederic Bateman, F.R.C.P.; Res. Asst. Med. Officer, Dr. A. Sykes. Access—Thorpe, cab fare 4/-; Victoria Station, cab fare 3/6; City Station, fare 3/-; Hellesdon Station, ½ mile.

The Bethel Hospital for the Insane. Res. Med. Sup., J. Fielding, M.D.; Con. Phys., Sir Frederic Bateman, F.R.C.P. Access—Thorpe Station, 1 mile.

NOTTINGHAM.—*Borough Asylum*, Mapperley Hill. Med. Sup., E. Powell, M.R.C.S.

Notts County Asylum, Snenton. Res. Med. Sup., Dr. A. Aplin. Access—Mid. and Gt. North. Station, about 15 minutes' walk.

The Coppice. Res. Med. Sup., W. B. Tate, M.D. Access—Mid. and Gt. North. Station, 2½ miles.

OMAGH.—*District Asylum.* Res. Med. Sup., Geo. E. Carre, M.B. Access—Omagh Station, 2 miles.

OXFORD.—*Oxford County Asylum.* Res. Med. Sup., R. H. H. Sankey, M.R.C.S. Access—Littlemore Station, G.W.R.

Warneford Asylum, Oxford 1½ mile (for private patients only). Res. Med. Sup., J. Bywater Ward, M.D. Access—Oxford Station, 2¼ miles. *See page* 711.

PERTH.—*District Asylum.* Med. Sup., C. M. Campbell, M.D.

James Murray's Royal Asylum (for private patients only), Perth and Kincarrathie, Scotland. Res. Phys. and Sup., Dr. Urquhart. Access—Perth, under 2 miles. *See page* 709.

PLYMOUTH.—*Plympton House*, Plympton, S. Devon. Res. Med. Sup., Charles Aldridge, M.D. Access—Plympton, 1 mile; Marsh Mills, 2 miles. *See page* 710.

PORTSMOUTH.—*Borough Asylum*, Res. Med. Sup., W. C. Bland, M.R.C.S. Access—Fratton Station, 2 miles.

PRESTWICH (near Manchester).—*County Asylum.* Res. Med. Sup., Henry R. Ley, M.R.C.S.

RAINHILL (near Prescot).—*County Asylum.* Med. Sup., T. Wiglesworth, M.D.

ROTHERHAM (Yorkshire).—*The Grange*, near Rotherham, 5 miles from Sheffield (for ladies). Res. Med. Prop., C. Clapham, M.D. Access—Grange Lane Station, ¼ mile.

SALISBURY.—*Fisherton House Asylum.* Med. Sup., William Corbin Finch, M.D. Access—Salisbury Stat., 5 minutes' walk. *See page* 705.

Laverstock House. Prop., J. Haynes; Med. Sup., Hy. J. Manning, M.R.C.S.

SHREWSBURY.—*Salop and Montgomery Counties Lunatic Asylum.* Res. Med. Sup., Arthur Strange, M.D. Access—Shrewsbury Station, 2½ miles.

SLIGO.—*District Asylum.* Res. Med. Sup., Dr. Joseph Petit.

STAFFORD.—*County Lunatic Asylum.* Res. Med. Sup., Dr. J. W. Stirling Christie. Access—Stafford Station, about 1 mile.

Institution for the Insane. Coton Hill, Med. Sup., Dr. R. W. Hewson.

STARCROSS (near Exeter).—*Western Counties Idiot Asylum.* Res. Sup., William Locke. Access—Starcross Station, 5 minutes' walk.

STIRLING.—*District Asylum.* Med. Sup., Dr. MacPherson.

ST. LEONARDS-ON-SEA.—*Ashbrook Hall*, Hollington (for ladies). Res. Prop., Mrs. Letitia A. Hitch. Access—Station, Warrior Square, St. Leonards-on-Sea, half-an-hour's walk.

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St. Patrick's Institution, Belmont's Park. Med. Sup., Dr. W. R. Connolly. *See page* 710.

WELLS.—*Somerset and Bath Asylum*, Wells, Somerset. Res. Med. Sup., A. Law Wade, M.D. Access—Wells, 2 miles; Masbury, 2½ miles.

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See page 715.

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See page 716.

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See page 716.

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See page 717.

Homes for Inebriates.

Formalities necessary before the reception of a patient (under the Inebriates' Acts of 1879 and 1888) into the Homes marked with an asterisk

The patient must sign a Form expressing a wish to enter the retreat, before two magistrates (who need not be Magistrates for the County in which the signature takes place). This can be done at the private residence of the patient, or on arrival at the retreat. Two friends of the patient must also sign a statutory declaration that they consider the patient an "Inebriate" within the meaning of the Acts.

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CROYDON.—*St. Raphael's*, Woodside. Apply Rev. A. Tooth. Access—Woodside Station. *See page* 720.

EARL'S COLNE (Essex).—*Buxton House* (for ladies). Prop., Miss Pudney; Med. Attendant, J. Taylor, M.R.C.S.

LEICESTER.—*Tower House* (for ladies). Prop., Mrs. Theobald; Med. Attendant, Dr. J. St. T. Clarke. Access—Leicester Station, 1½ miles.

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Hydropathic Establishments of Great Britain.

We wish to make this list complete, but it is impossible when some Proprietors do not return out letter of enquiry which is *stamped for reply*. This will account for some omissions in the present edition.

ABERDEEN.—*Deeside Hydropathic Establishment*, Heathcot, near Aberdeen.—Res. Med. Sup., Alexander Stewart, M.D., LL.D., F.A.S. Access—Rail to Aberdeen, thence by cab or omnibus. Hydropathic conveyance meets any train when sent for, distance 5 miles.

See page 718.

BASLOW (near Chesterfield). *Baslow Hydropathic Establishment*, near Chatsworth Park, Derbyshire. Res. Med. Sup., E. M. Wrench, F.R.C.S. Access—Rowsley Station, 4½ miles.

BATH.—*West of England Hydropathic Establishment*, Limpley Stoke, near Bath. Res. Phys., C. J. Whitby, M.B. Access—Limpley Stoke Station.

BEN RHYDDING.—*Ben Rhydding.* Near Leeds, Bradford, or Harrogate. Phys., Thos. Johnstone, M.D., M.R.C.P. Access—Ben Rhydding Station, a few hundred yards.

BISHOPS-TEIGNTON (near Teignmouth).—*The South Devon Health Resort.* Prop., C. F. Carpenter. Med. Sup., Wm. Dale, M.D. Access—Teignmouth Station, 2½ miles.

See page 716.

BORTH (Cardiganshire).—*Hydropathic Establishment.* Med. Sup., J. Harden Jones, M.R.C.S.

BOURNEMOUTH (Hampshire).—*Bourne Hall*, a residence under medical direction (not a Hydropathic or confirmed Invalid Establishment). Res. Phys., Ed. P. Philpots, M.D. Access—Bournemouth, West Station, 1 minute's walk.

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The Peak Hydro-Thermal Establishment and Mineral Water Baths. Phys., S. Hyde, M.D. 4 minutes from Station. *See page* 720.

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CRIEFF.—*Strathearn House* (17 miles from Perth). Res. Med. Sup., Thos. H. Meikle, M.D., J.P. Access—Crieff Station, 1 mile.

DUNBLANE.—*Dunblane Hydropathic*, Perthshire. Res. Phys. Access—Dunblane Station, 1 mile. *See page* 719.

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The Imperial Sanatorium and Electropathic Establishment, Royal Parade. Res. Med. Officer, J. R. Tunmer, M.R.C.S., E., etc.

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A List of the Principal Medical Works and New Editions Published during 1892.

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Hills & Co. 46, Newcomen Street, Boro', S E.
Hooper & Co. 7, Pall Mall, East
Hutchinson, W. & H Sheffield
Huxley, E. 13, Old Cavendish St. Oxford Street, W.
King, Mendham & Co. Bristol
Krohne & Sesemann, 8, Duke Street, Manchester Square, W.
Lindsey & Sons, 40, Gracechurch Street, E.C.
Lynch & Co. 192, Aldersgate Street
McIlroy, T., 18, High Street, Camden Town, N.W.
Matthews Bros. 10, New Oxford Street, W.C.
Maw, S Son & Thompson, 7 to 12, Aldersgate Street, E.C.
Mayer & Meltzer, 71, Great Portland Street, W.
Milne, John, Ladywell, S E.
Reynolds & Branson, 13, Briggate, Leeds
Salmon, H. R. 42, Beaumont St. W
Salmon, Ody & Co. 292, Strand
Schall, K. 55, Wigmore Street, W
Schramm, K. R. Gt Castle Street, Cavendish Square, W.
Spratt, W. H. & Brooke, 48, New Bond Street, W.
Statham, H. & Co. Corporation St. Manchester
Ward, John, 246, Tottenham Court Road
Weiss, J. & Son, 287, Oxford Street
Winter, R. J. & Co. 57, Goodge Street, W.
Wright, C. & Co., 108, New Bond Street, W.

Vaccine Lymph.

Lymph is supplied, free of charge on application to National Vaccine Establishment, New Government Buildings, Whitehall, London, S W

Association for the supply of pure Vaccine Lymph, 12, Pall Mall East, S W.
Dakin Brothers, 87A, Leadenhall Street, E C.
Faulkner, W. 16, Endell Street, Bloomsbury, W.C.
Ferris & Co. Bristol
Rebman, F. J. 40, Berners St. W
Renner's (Dr) Establishment, 180, Marylebone Road, N.W.
Somerville, R. & H. 10, Spring Gardens, Edinburgh

Medical and Scientific Newspapers, etc.

Analyst—Monthly 6d—Baillière and Co. King William Street, W.C.

Anatomy and Physiology, Journal of —24/- per annum—Williams & Norgate, Covent Garden

Annals of Surgery—Monthly 2/- — Cassell & Co. (Lim.) Ludgate Hill

Anthropological Journal—Quarterly 5/—Kegan, Paul & Co. Ludgate Hill

Asclepiad — Quarterly 2/6—Longmans & Co. Paternoster Row

Birmingham Medical Review — Monthly 1/—Hall & English, High Street, Birmingham

Botanical Magazine—Monthly 3/6 —Reeve & Co. 5, Henrietta St. Covent Garden

Botany, Journal of—Monthly 1/3— West, Newman & Co. 54, Hatton Garden

Brain—Quarterly 3/6—Macmillan & Co. Bedford Street, W.C.

Braithwaite's Retrospect — Half Yearly 6/6—Simpkin & Co. Stationers' Hall Court

Bristol Medico-Chirurgical Journal —Quarterly 1/6—J. W. Arrowsmith, Bristol

British and Colonial Druggist —Weekly 6d—21, New Bridge Street

British Gynæcological Journal — Quarterly 2/6—John Bale and Sons, Gt. Tichfield Street, W.

British Medical Journal—Weekly 6d—429, Strand, W.C.

Chemical Industry—Journal of Society of—Monthly 2/-—Eyre & Spottiswoode, New Street, E.C.

Chemical News—Weekly 4d—Boy Court, Ludgate Hill, E.C.

Chemical Review—Monthly 1/—5, Furnival Street, E.C.

Chemical Society, Journal of the— Monthly, 30/- per annum— Gurney & Jackson, 1, Paternoster Row, E.C.

Chemist and Druggist, the—Weekly 10/- per annum—42, Cannon Street

Chemists and Druggists, Register of —Annual 5/—17, Bloomsbury Square

Clinical Journal—18, Middle Street, E.C.

Dental Association, Journal of British—Monthly 6d—11, Burlington Street

Dental Record—Monthly 6d—Little Windmill St. Golden Square

Dental Science—British Journal of —1st and 15th 6d—J. P. Segg & Co. 291, Regent Street, W.

Dentist's Register—Annually 3/9— General Medical Council, 299, Oxford Street, W.

Dermatology—British Journal of— Monthly—H. K. Lewis, 136, Gower Street, W.C.

Dublin Journal of Medical Science —Monthly 2/- —Fannin & Co.

Edinburgh Medical Jour. — Monthly 2/- —Oliver & Boyd, Edinburgh

Entomologist, Monthly Magazine— Monthly 6d — Gurney and Jackson, 1, Paternoster Row

Entomologist, Newman's—Monthly 6d—Simpkin & Co. Stationers' Hall Court

Geological Magazine—Monthly 1/6 —Kegan Paul & Co. Ludgate Hill

Geological Society, Journal of— Quarterly 5/— 14, Henrietta Street, W.C.

Geologist's Association's Proceedings—Quarterly 1/6—E. Stanford, 27, Cockspur Street

Glasgow Medical Journal—Monthly 2/—A. Macdougall, 81, Buchanan Street, Glasgow

Guy's Hospital Gazette—Fortnightly—42, Southwark Street

Guy's Hospital Reports—Yearly— J. & A. Churchill, New Burlington Street, W.

Health—Weekly 2d—2, Paternoster Square

Homœopathic Association (British) Annals of—Half-yearly 2/6— Kegan Paul & Co. Ludgate Hill

Homœopathic Review—Monthly 1/—E. Gould & Son, 59, Moorgate Street, E.C.

Homœopathic World—Monthly 6d—12, Warwick Lane

Hospital—Weekly 1d—140, Strand

Hygiene—Monthly 6d—39, Southampton Street, W.C.

Ibis, the—Quarterly 6/—Gurney & Jackson, 1, Paternoster Row

Index Medicus—Annually 50/—Kegan Paul & Co. Ludgate Hill

International Journal of the Medical Sciences—18/- per annum—Young J. Pentland, 38, West Smithfield

Irish Medical Directory—Annually 6/—Baillière & Co. 20, King William Street, W.C.

Knowledge—Monthly 6d—326, High Holborn

Lancet—Weekly 7d—423, Strand, W.C.

Laryngology, Rhinology, & Otology, Journal of—Monthly 1/3—F. A. Davis Co. 40, Berners Street

Linnæan Society, Proceedings of—Annually 3/—Longmans & Co.

Linnæan Society, Transactions—Irregular Price varies—Society's Apartments, Burlington House

Liverpool Medical Chirurgical Journal—Half-yearly—H. K. Lewis, Gower Street, W.C.

Medical Annual—Annually 7/6—J. Wright & Co. Bristol

Medical Chronicle—Monthly 2/—John Heywood, Manchester

Medical Directory—Annually 14/—J. & A. Churchill, 11, New Burlington Street

Medical Press & Circular—Weekly 5d—A. A. Tindall, 20, King William Street

Medical Record—Bi-Monthly, 30/- per annum—Kegan Paul & Co. Ludgate Hill, E.C.

Medical Register—Annually 6/—299, Oxford Street, W.

Medical Student's Register—Annually 1/2—229, Oxford St. W.

Medical Magazine—Monthly 2/6—Southwood, Smith & Co. 4, King Street, E.C.

Medical Pioneer—Monthly—33, Paternoster Row, E.C.

Medical Temperance Journal—Quarterly 6d—33, Paternoster Row

Medical Times & Hospital Gazette—Weekly—The Record Press (Lim.) 376, Strand

Mental Science, Journal of—Quarterly 3/6—J. and A. Churchill, 11, New Burlington Street

Meteorological Record—Quarterly—E. Stanford, 27, Cockspur Street, S.W.

Meteorological Society, Journal of—Quarterly 5/—E. Stanford, 27, Cockspur Street, S.W.

Microscopy and Natural Science, Journal of—Quarterly 1/6—Baillière & Cox, King William Street

Microscopical Science, Quarterly Journal of—10/—J. and A. Churchill, New Burlington St.

Mind—Quarterly 3/—Williams & Norgate, Henrietta Street, W.C.

Monthly Extract of British Journal of Dental Science—Subscribers only—322, 324, Regent Street, W.

Naturalist Gazette—Monthly—4, Ave Maria Lane, E.C.

Nature—Weekly 6d—Macmillan & Co. Bedford Street

Nervous and Mental Diseases—Quarterly, 21/- per annum—Kegan Paul & Co. Ludgate Hill

New Sydenham Society—Irregular—Subscription 21/—H. K. Lewis, 136, Gower Street

Nursing Record—Weekly 1d—Record Press (Lim.), 376, Strand, W.C.

New York Medical Journal—Monthly, 27/6 per annum—Kegan Paul & Co. Ludgate Hill

Odontological Society, Transactions of—Monthly during Sessions 2/6—Bale and Son, 87, Great Tichfield Street

Ophthalmic Hospital Reports—Half Yearly 5/—J. & A. Churchill New Burlington Street

Ophthalmic Review—Monthly 1/—J. & A. Churchill, New Burlington Street

Ophthalmological Society's Transactions — Yearly — J. and A. Churchill, 11, New Burlington Street, W.

Ophthalmology, Archives of — Quarterly, 20/- per annum—Kegan Paul & Co. Ludgate Hill, E.C.

Otology, Archives of — Quarterly, 12/- per annum—Kegan Paul & Co. Ludgate Hill, E.C.

Pathology & Bacteriology, Journal of—Quarterly—Y. J. Pentland, West Smithfield, E.C.

Pharmaceutical Journal — Weekly 4d—J. & A. Churchill, 11, New Burlington Street

Pharmaceutical Society, Calendar of —Annually 1/- — 17, Bloomsbury Square

Pharmacy, Monthly Magazine of—Monthly 6d—Burgoyne, Burbidges & Co. 16, Coleman St. E.C.

Physiology, Journal of—21/- per volume—St. Tibb's Row, Cambridge

Practitioner — Monthly 1/6—Macmillan & Co. Bedford Street

Provincial Medical Journal — Monthly 6d—10, Friar Lane, Leicester

Psychical Research, Proceedings of Society for — Occasionally — Kegan Paul & Co. Ludgate Hill

Public Health—Monthly—E. W. Allen, Ave Maria Lane, E.C.

Quarterly Therapeutic Review—1/—Baiss Bros. & Co. 4, Jewry St.

Queckett Microscopic Club, Journal of—Half-yearly 2/6—Williams and Norgate, 14, Henrietta St.

Registrar General's Return of Births, Deaths & Marriages—Weekly, Quarterly & Annually — Eyre & Spottiswoode, 9, East Harding Street

Royal College of Surgeons' Calendar —Annually 1/- — Taylor and Francis, Red Lion Court, Fleet Street, E.C.

Royal Microscopical Society, Journal of—Bi-Monthly, 30/- per annum—Williams & Norgate, Henrietta St. Covent Garden

Sanitarian—Weekly 3d—Warwick Court, Holborn

Sanitary Institute, Transactions of —E. Stanford, 27, Cockspur Street

Sanitary Journal—Monthly 6/- per annum — A. Macdougall, 81, Buchanan Street, Glasgow

Sanitary Record—Monthly 10/- per annum—60, St. Martin's Lane, W.C.

Science Gossip — Monthly 4d — Chatto & Windus, 214, Piccadilly

Scientific American—Weekly, per annum 18/- —Kegan Paul & Co. Ludgate Hill

Scientific Review—Monthly 6d—Kent & Co. 21, Cockspur St. W.C.

Sheffield Medical Journal—Quarterly 2/-—Pawson & Brailsford, Sheffield

St. Bartholomew's Hospital Reports —Yearly—15, Waterloo Place, S.W.

St. Thomas's Hospital Reports—Yearly—J. & A. Churchill, New Burlington Street, W.

Veterinarian—Monthly 1/6—Longmans & Co. 39, Paternoster Row

Veterinary Journal—Monthly 1/6—Baillière & Co. King William St.

Westminster Hospital Reports—Yearly—J. & A. Churchill, New Burlington Street, W.

Year Book of Pharmacy—Annually 10/—J. & A. Churchill, 11, New Burlington Street, W.

Year Book of Treatment—Annually 7/6—Cassell & Co.

Zoological Record—Annually 30/—Gurney & Jackson, Paternoster Row

Zoological Society of London, Proceedings—Quarterly 3/- plain; 12/- coloured—Longmans & Co. Paternoster Row

Zoologist—Monthly 1/- — Simpkin and Co. Paternoster Row

The Medical Annual Note Book.

IT is easier to make a note of a thing, than to remember *where* the note was made. The following pages are indexed under their respective headings, and any note can be immediately found when required.

NOTES.

Copy here any formula or fact you wish to keep for reference. (These pages are indexed under the words "Notes.")

Malto-Ricine.

A solution of the finest cold drawn Castor Oil in Extract of Malt; the somewhat objectionable flavour of the oil is completely covered. Not only so, but by virtue of its association with Kepler Extract of Malt the very laxative properties of the Oil are enhanced, while any tendency to griping is subdued.

NOTES.

Beef and Iron Wine.

As a general tonic after acute attack of disease, especially in the case of women and children, this very palatable preparation has much to recommend it. Prepared from fresh Beef Juice (in combination with an assimilable Salt of Iron), dissolved in a pure medicinal wine. **Does not constipate.**

NOTES.

"Tabloids" of Compressed Drugs (PREPARED BY Burroughs, Wellcome & Co.)

Recommend themselves to Medical men for several reasons: (*a*), They are always reliable; (*b*), They are accurately apportioned; (*c*), Their strengths never vary; (*d*), They are easily dispensed; (*e*), They can easily be carried on the visiting round.

ADDRESSES (PRIVATE).

The Kepler Solution of Cod Liver Oil

In Kepler Malt Extract is not merely a solution in name, but a solution in fact. The taste of the Oil is agreeably covered, its very finely divided state renders it more easy of digestion, the nutritive value of the combination being thus much enhanced. "An ideal form for the administration of fat."—*British Medical Journal.*

NURSES.

Note whether Midwifery or Sick Nurse, their terms, and private address.

The Pinol-Eucalyptia Dry Inhaler.

This simple, unpretending little instrument may be used for many of the inhalants now frequently prescribed. Its use, in connection with Pinol, Terebene, Eucalyptia, has become more general of late, on account of the success achieved by means of it in treatment of affections of the respiratory organs, and as a preventive against Malarial attacks.

BOOKS OR INSTRUMENTS LENT.

The Kepler Extract of Malt.

The reputation of the Kepler Extract of Malt is undiminished, and every care is taken in its manufacture to maintain this high standard of excellence. The *Lancet* reports: "It is the best known and largest used."

DRUGS WANTED.

Ichthyol Compounds.

For the external application of Ichthyol, the Ichthyol Lanoline Ointment (Ungt. Ichthyolis, B., W. & Co.) is by far the best; while for its internal administration no means (for perfect covering of taste, elegance of appearance, and activity of the drug) are to be compared with Ichthyol (sugar coated) "Tabloids," each containing 2½ grs.

DRUGS WANTED.

The Vereker Chloride Ammonium Inhaler.

The Vereker Inhaler answers perfectly if properly charged, delivering absolutely neutral vapour, and, a most important point as far as the lay public is concerned, can be used a great number of times without requiring a re-charge.

41

INSTRUMENTS, APPLIANCES OR MATERIALS WANTED.

Hazeline

Is the water white aromatic liquid obtained by distillation from the leaves and green twigs of the Witch Hazel Hamamelis Virginica. Is employed successfully in the arrest of hæmorrhage from the nose, lungs, stomach, bowels, kidneys, womb, etc. May be used also undiluted for sprains, soreness, lames, stiffness, etc. In combination with "Lanoline" it forms one of our most effective applications in hæmorrhoids.

Fairchild's Digestive Preparations.

PEPSINE.—Absolutely pure and extremely active.
ZYMINE.—A pure extract of the Pancreas.
ZYMINE COMPOUND.—Containing Pancreatic Extract, Bismuth and Ipecacuanha.
The above can be had in Powder and in "Tabloids."

Fairchild's Peptonising Powders.

For the effectual and rapid pre-digestion of foods for the sick, the invalid, and the infant. Directions are given in simple language, so that the least educated can be entrusted to carry them out correctly.

Flitwick

A Remarkable ENGLISH MEDICINAL SPRING.

THE MOST VALUABLE SPECIFIC KNOWN FOR

ANÆMIA, CHLOROSIS AND GENERAL DEBILITY.

FLITWICK gained the Highest Award at the International Medical and Sanitary Exhibitions.

Extract from LANCET,

October 24th, 1891.

"The Flitwick Spring is certainly a remarkable one. The water is a bright Sherry colour, pleasantly acid to the taste, and contains a surprisingly large quantity of a valuable form of iron fitted for speedy absorption and assimilation into the system. The results of its extended use where the medical practitioner knows iron to be indicated will be watched with peculiar interest, and in view of its singularity of character the Chalybeate Water of the Flitwick Spring is especially worthy of a trial."

The BRITISH MEDICAL JOURNAL,

September 10th, 1892.

"Flitwick is a remarkable English medicinal spring discovered in Bedfordshire, which contains in each gallon more than 170 grains of iron as persalt in a nearly neutral solution. A powerful iron water of this kind is obviously of considerable value in the therapeutic treatment of a wide range of affections. The water is pleasantly acid to taste, and does not blacken the teeth."

WHOLESALE CENTRAL DEPOT,
63, BOROUGH, HIGH STREET.

LONDON AGENTS,
Ingram & Royle, 52, Farringdon St.

BOTTLES, 1/6 & 2/6, of all Chemists. *Sample Bottles free to the profession.*

FIRE LIFE & ANNUITIES ESTABLISHED 1836.

LIVERPOOL & LONDON & GLOBE INSURANCE COMPANY.

Home Branches.

Liverpool } Head Offices.
London }
Manchester,
Leeds,
Bristol,
Glasgow,
Edinburgh,
Dublin,
Newcastle,
Birmingham.

ANNUAL INCOME EXCEEDS
£2,000,000.

CLAIMS PAID EXCEED
£27,834,866.

FUNDS IN HAND EXCEED
£8,000,000.

Applications for Agencies invited.

Foreign Branches.

New York,
New Orleans,
Chicago,
San Francisco,
Montreal,
Sydney,
Melbourne;
& Agencies in all other important towns in the world.

INDEX TO LIFE ASSURANCE OFFICES.

A, *when Established;* B, C, D, *Annual Premiums to Insure £100 on death with Profits, at the age of* 30, 40, *and* 50; E, *Assurance and Annuity Funds, exclusive of Paid-up Capital.* M, *Mutual Offices;* P, *Proprietary Offices.*

Title, &c., of Society.	A	B	C	D	E
					£
Abstainers' and General, Life and Accident, Colmore Chambers, Newhall Street, Birmingham. *Sec.* R. A. Craig .. .. P	1883	40/11	55/10	82/3	29,631
Alliance, Fire and Life, Bartholomew Lane, E.C. *Sec.*, Robert Lewis .. .. P	1824	49/2	66/6	94/2	2,1 8,158
Atlas, Fire and Life, 92, Cheapside, E.C. *Sec.*, S. J. Pipkin. *Act.*, George King. *Further particulars see page* 652 .. .. P	1808	49/3	63/7	88/8	1,394,225
British Empire, Mutual Life, 4 & 5, King William Street, E.C. *Act.* and *Sec.*, H. J. Rothery M	1847	48/3	64/2	91/1	1,533,178
British Equitable, Life, 4, Queen Street Place, E.C. *Man. Dir. & Act.*, W. S. Gover, F.S.S., F.I.A. .. .. P	1854	49/-	66/-	91/3	1,312,46
British Workman's, Life and Endowments, Broad Street Corner, Birmingham. *Man.*, H. Port, F.S.A. *Further particulars see page* 651 P	1866	47/11	64/6	92/3	116,003
Caledonian, Fire and Life, 19, George Street, Edinburgh. *Man.*, D. Deuchar. London Office, 82, King William Street, E.C. .. .. P	1805	48/9	64/6	88/6	1,082,600
Church of England, Life and Fire, 9 and 10, King Street, Cheapside, E.C. *Sec.*, H. M. Baker P	1840	46/10	63/6	91/11	645,504
City of Glasgow, Life, 30, Renfield Street, Glasgow. *Man.*, F. F. Elderton. London Office, 12, King William Street, E.C. *Sec.*, J. Ballantyne P	1838	48/5	64/6	89/10	1,775,984
Clergy Mutual, Life, Endowments, &c., 2 & 3, Sanctuary, Westminster. *Sec.*, Matthew Hodgson M	1829	46/4	62 2	87/4	3,653,341
Clerical, Medical and General, Life, 15, St. James' Square, and Mansion House Buildings *Act.*, B. Newbatt .. .. P	1824	48/9	65/-	90/9	3,013,607
Colonial Mutual, Life and Annuity, 33, Poultry. *Man.*, E. W. Browne. *A. Sec.*, B. H. James M	1874	44/8	60/9	86 2	1,372,361
Commercial Union, Fire, Life and Marine, 19 & 20, Cornhill, E.C. *Act.*, T. E. Vonng, B.A. P	1861	49/5	64/2	87/8	1,381,899
Co-operative, Fire, Life and Fidelity, Corporation Street, Manchester. *Man.*, James Odgers P	1867	45 10	61/8	87/6	4.994
Eagle, Life, 79, Pall Mall, S.W. *Act.* and *Sec.*, G. Humphreys, M.A., F.I.A. .. .. P	1807	50 8	65/5	91/4	2.536,071
Economic, Life, 6, New Bridge Street, Blackfriars. *Act.* and *Sec.*, G. Todd, M.A., F.I.A. M	1823	44 3	59/9	87/6	3,527,256
Edinburgh, Life and Annuities, 22, George Street, Edinburgh. *Sec.*, A Hewat, F.F.A., F.I.A. London Office. 11, King William Street, E.C. *Sec.*, Frank Griffith .. .. .. P	1823	47 7	63 2	89/-	2,545,043
English and Scottish Law, Life, Annuity, Endowment, and Loan, 12, Waterloo Place, S.W. *Act.* and *Sec.*, F. E. Colenso, F.I.A. .. .. P	1839	48/8	64/6	90/-	1,675 261
Equitable Society, Life and Survivorship, Mansion House Street, E.C. *Act.*, A. F. Burridge M	1762	53/5	67/11	99/8	4.193,101
Equity and Law, Life, 18, Lincoln's Inn Fields, W.C. *Act.*, G. W. Berridge, F.I.A. .. .. P	1844	48/10	64 6	90/9	2,366,662
Friends' Provident, Life, Annuities, &c., Bradford, Yorkshire. *Act.* and *Sec.*, John Bell Tennant M	1832	45/9	58 1	79 3	2,148,320
General Life, 103, Cannon Street, E.C. *Man.* and *Sec.*, Henry Ward .. .. .. P	1837	49/10	65/4	92/8	1,170,530

A, *when Established*; B, C, D, *Annual Premiums to Insure £100 at death, with Profits, at the age of 30, 40 and 50*; E, *Assurance and Annuity Funds exclusive of Paid-up Capital*. M, *Mutual Offices*; P, *Proprietary Offices*.

Title, &c., of Society.	A	B	C	D	E
					£
Gresham, Life, St. Mildred's House, E.C. *Act.* and *Man.*, T. G. Acland, F.I.A. .. P	1848	49/-	65 8	94/3	4,624,311
Guardian, Fire and Life, 11, Lombard Street, and 21, Fleet Street. *Sec.*, T. G. C. Browne.. P	1821	48 10	64 6	89/3	2,526,130
Hand-in-Hand, Fire, Life and Annuities, 26, New Bridge Street, Blackfriars, E.C. *Man.*, B. Blenkinsop .. .. M	1696	50 8	68 10	99 3	2,4 8,359
Imperial, Life, 1, Old Broad Street, and 22, Pall Mall. *Act.* and *Man.*, J. Chisholm, F.I.A. P	1820	46/11	62/1	87/5	1,406,668
Lancashire, Life and Fire, Exchange Street, Manchester. *Gen. Man.*, Geo. Stewart. London Office, 14, King William St., E.C. *Sec.*, John Oliver P	1852	48/6	63/6	90/6	862,639
Law Life, 187, Fleet Street. *Man.*, E. H. Holt. *Act.*, A. B. Adlard .. .. .. P	1823	49/4	64 10	91/-	3,809,403
Law Union, Life, Fire and Annuities, 126 Chancery Lane. *Gen. Man.*, A. Mackay .. P	1854	49/4	65 3	92/-	972,956
Legal and General Life, 10, Fleet Street, E.C. *Act.* and *Man.*, E. Colquhoun, F.I.A. .. P	1836	50/9	65 11	90/9	2,402,206
Life Association of Scotland, 82, Prince's Street, Edinburgh. *Sec.*, J. Sharpe. London Office, 5, Lombard Street. *Sec.*, J. C. Wardrop . P	1838	50/-	65 4	93/4	3 717,786
Liverpool and London and Globe, Fire, Life and Annuities, 1 Dale Street, Liverpool. *Sec.*, John M. Dove. London Office, 7, Cornhill, E.C. *Sec.*, A. Hendriks, F.I.A. *Further particulars see page* 646 .. .. P	1836	49/3	65/6	91/3	4,278,526
London Amicable, Life and Accident, 3, Regent Street, S.W. *Sec.*, Walter Wieland .. P	1887	47 10	63 5	91 4	47,021
London and Lancashire, Life, 66, Cornhill, E.C. *Sec.*, G. W. Mannering .. .. P	1862	46/10	62 4	86/10	760,263
London Assurance Corporation, Fire, Life & Marine, 7, Royal Exchange. *Act*, A. H. Bailey, F.I.A. P	1720	49/6	64/11	91/5	2,019,738
London, Edinburgh and Glasgow, Life, Industrial, and Accidents, Farringdon Street, E.C. *Sec.*, T. V. Cowling .. .. .. P	1881	48/11	64/7	92/-	34,225
London Life Association, 81, King William Street, E.C. *Act.* and *Sec.*, C. D. Higham, F.I.A. M	1806	59/3	77/	107 6	4,076,110
Marine and General Mutual, Life and Marine, 14, Leadenhall Street, E.C. *Act.* and *Sec.*, S. Day, F.I.A. .. .. .. M	1852	48/10	65/11	91 11	616,511
Metropolitan Life, 13, Moorgate Street, E.C. *Act.*, Arthur Pearson .. .. .. M	1835	49 9	66/4	92 -	1,985,797
Mutual Life, 39, King Street, Cheapside, E.C. *Act.*, H. W. Manly, F.I.A. *Sec.*, H. G. Rowsell M	1834	48 10	66 8	97/11	1,235,801
National Assurance of Ireland, Fire, Life, and Annuities, 3, College Green, Dublin. *Sec.*, Harold Engelbach, London Office, 33, Nicholas Lane, E.C. *Sec.*, Charles Smith .. .. P	1822	48/7	64/3	91/7	279,694
National Guardian, Life and Loans, 21, New Oxford Street, W.C. *Sec.*, Thomas J. Bourne .. P	1865	48 6	64 8	86/8	9,435
National Life, 2, King William Street, City. *Man.* and *Sec.*, H. J. Puckle .. .. .. M	1830	50/4	65 9	92 8	828,690
National Provident, 48, Gracechurch Street, E.C. *Act.* and *Sec.*, Arthur Smither .. .. M	1835	50/2	66 3	91/1	4,579,717
North British & Mercantile, Fire, Life & Annuities, 61, Threadneedle Street, E.C., and 64, Prince's Street, Edinburgh. *Life Man.* and *Act.*, H. Cockburn, *Sec.*, F. W. Lance. *Further particulars see page* 653 .. .. .. P	1823	49/10	66 1	91 11	7,136,282
Northern Assurance, 1, Moorgate St., E.C. *Gen. Man.*, James Valentine. *Sec.*, H. E. Wilson P	1836	48 8	64/10	92/4	2,518,430
Norwich Union, Life, Norwich. *Sec.*, J. J. W. Deu-har. London Office, 50, Fleet Street, E.C. *Further particulars see page* 654 .. M	1808	51/9	66/6	92/5	1,960,437

A, *when Established*: B, C, D, *Annual Premiums to Insure £100 on death, with Profits, at the age of 30, 40 and 50*; E, *Assurance and Annuity Funds, exclusive of Paid-up Capital.* M, *Mutual Offices*; P, *Proprietary Offices.*

Title, &c., of Society.	A	B	C	D	E
					£
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1883 -	£95,898 ..	£79,734 ..	£80,922 ..	£256,554
1891 -	238,393 ..	110,922 ..	77,015 ..	426,330

Total Assets (31st December, 1891), £1,961,778.

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I.—Authorised Capital	£3,000,000 0 0		
Subscribed Capital ...	2,750,000 0 0		
Paid-up Capital		£687,500 0 0	
II.—Fire Funds—Reserves (including Balance of Profit and Loss Account)		2,717,177 12 9	
III.—Life Funds—Accumulated Fund of the Life Branch	£6,012,552 0 7		
Accumulated Fund of Annuity Branch	1,278,739 9 7		
		7,291,291 10 2	
		£10,695,969 2 11	

REVENUE FOR THE YEAR 1891.

From Fire Department—Net Premiums, Interest, &c.		£1,552,862 5 8	
,, Life Department—Net Premiums, Interest, &c. ...	£829,861 1 7		
,, ,, Annuity Premiums and Interest	267,806 19 2		
		1,097,668 0 9	
		£2,650,530 6 5	

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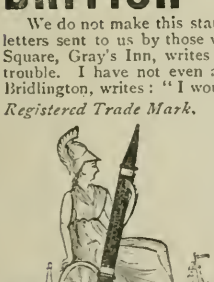

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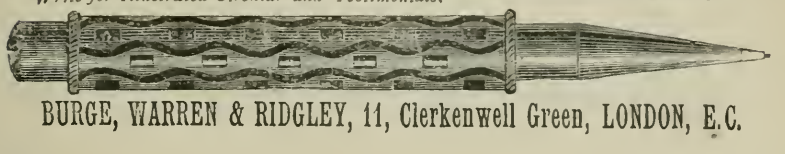

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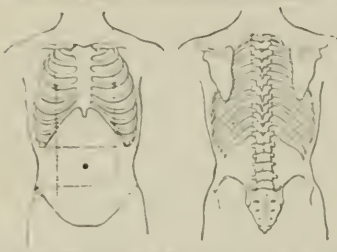

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,, Cannabis Indicæ ,, 5 mins.
,, Capsici 1 min.
,, Cinchonæ Simp. ,, 30 mins.
,, Cinchonæ Comp. ,, 30 mins.
Tinct. Digitalis "Tabloids," 1 and 5 mins.
,, Gelsem Semp. ,, 5 mins.
,, Hyoscyami ,, 10 mins.
,, Nucis Vomicæ ,, 1, 3, and 10 mins.
,, Opii ,, 2, 5, and 10 mins.
,, Strophanthi Hisp. ,, 2 mins.
,, Warburgh's Fever ,, 30 mins.
Tinct. Zingib. Fort "Tabloids," 5 mins.

"SOLOIDS."

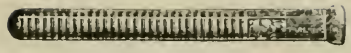
Under this name we issue a number of Compressed Drugs which are intended for use in the form of solution, or wash, or any method other than per *os*.

"Soloids" Hydrarg. Perchlor.
One "Soloid" in a pint of water makes a solution of 1 in 1,000.

"Soloids" Iodic-Hydrarg., 1 gr.
(Soluble Biniodide of Mercury.)
(Two dissolved in a pint of water makes a solution of 1 in 4,000, about.)

"TABLOIDS" FOR HYPODERMIC MEDICATION.

The growing importance of the Hypodermic method, the marvellous results obtained by it, the vast improvement in the instruments employed, and the perfection to which the Hypodermic "Tabloid" has been brought (to the utter displacement of unreliable and irritating solutions), are all matters of peculiar interest to the earnest practitioner. The alarming symptoms and the untoward physiological disturbances so frequently observed after the administration of ready-made and often partially decomposed solutions are altogether avoided when the injection is prepared from the Hypodermic "Tabloids." They are guaranteed to be absolutely accurate in dosage, do not alter, are always reliable and easily soluble, and can be thrown into solution in a few seconds.



THE HYPODERMIC "TABLOIDS"

Are put up in Tubes, each containing 20 "Tabloids," with the exception of those marked with an asterisk, which contain 12 "Tabloids," at 12/- per dozen Tubes.

		No.
Aconitine, Nitrate Crystalline	1-260 gr.	36
Apomorphine Hydrochlorate	1 10 gr.	19
Apomorphine Hydrochlorate	1-15 gr.	51
Atropin Sulphate	1-150 gr.	15
Atropin Sulphate	1-100 gr.	14
Atropin Sulphate	1-60 gr.	13
*Caffeine Sodio-Salicylate	1-2 gr.	43
Cocaine Hydrochlorate	1-6 gr.	22
*Cocaine Hydrochlorate	1-2 gr.	40
*Cocaine Hydrochlorate	1-4 gr.	54
Codeine Phosphate	1-4 gr.	44
Colchicin	1-100 gr.	45
*Cornutin Hydrochloride	1-60 gr.	58
Curare	1-12 gr.	46
Digitalin, Crystalline	1-100 gr.	30
Ergotinin Citrate	1-100 gr.	37
Ergotinin Citrate	1-200 gr.	38
Eserine Salicylate	1-100 gr.	39
Homatropine Hydrochlorate	1-250 gr.	47
Hydrarg. Perchlor	1-60 gr.	29
Hydrarg. Perchlor	1-80 gr.	28
Hyoscine Hydrobromate	1-200 gr.	49
*Hyoscine Hydrobromate	1-75 gr.	48
*Hyoscyamine Sulphate	1-80 gr.	31
*Hyoscyamine Sulphate	1-20 gr.	41
Morphine Bi-Meconate	1-8 gr.	27
Morphine Bi-Meconate	1-6 gr.	26
Morphine Bi-Meconate	1 4 gr.	25
Morphine Bi-Meconate	1-3 gr.	24
Morphine Hydrochlor	1-4 gr.	55

In no case is it more important to a Medical Man to have an agent of unimpaired physiological activity than, when in anxious moments he has recourse to the hypodermic method.

		No.
Morphine Sulphate	1-12 gr.	6
Morphine Sulphate	1-8 gr.	5
Morphine Sulphate	1-6 gr.	4
Morphine Sulphate	1-4 gr.	3
Morphine Sulphate	1-3 gr.	2
*Morphine Sulphate	1-2 gr.	1
Morphine Sulphate Atropine Sulphate	1-12 gr. 1-250 gr.	12
Morphine Sulphate Atropine Sulphate	1-8 gr. 1-200 gr.	11
Morphine Sulphate Atropine Sulphate	1-6 gr. 1-180 gr.	10
Morphine Sulphate Atropine Sulphate	1-4 gr. 1-150 gr.	9
Morphine Sulphate Atropine Sulphate	1-3 gr. 1-120 gr.	8
*Morphine Sulphate Atropine Sulphate	1-2 gr 1-100 gr.	7
Pilocarpine Hydrochlorate	1-10 gr.	34
Pilocarpine Hydrochlorate	1-6 gr.	64
*Pilocarpine Hydrochlorate	1-3 gr.	33
*Pilocarpine Hydrochlorate	1-2 gr.	32
Quinine Hydrobromate	1-2 gr.	42
*Sclerotinic Acid	1-2 gr.	21
*Sclerotinic Acid	1 gr.	20
Sparteine Sulphate	1-2 gr.	56
Strophanthin	1-500 gr.	52
Strychnine Sulphate	1-150 gr.	18
Strychnine Sulphate	1-100 gr.	17
Strychnine Sulphate	1-60 gr.	16

HYPODERMIC APPARATUS.

HYPODERMIC NEEDLES AND MOUNTS—

	EACH.
For Solid Silver Syringes	2 0
„ Nickel Silver	1 4
Incorrodible Needles (Gold and Platina)	2 0
Incorrodible Needles (Platina and Iridium)	3 0

HYPODERMIC SYRINGES (B., W & Co.)—

Solid Silver	10/0
Nickel Silver	7/0
Aseptic Syringe	5/0
„ „ (New, Aluminium)	7/0

THE NEW PATENT PURE ALUMINIUM SYRINGE. (B., W. & Co.)

ADVANTAGES: Lightness, graduation in two systems, incorrodible, easily made aseptic and cleansed, new arrangement of packing, &c.

HYPODERMIC CASES. (B., W. & Co.)

No. 7. arranged *to contain* 12 Tubes of the HYPODERMIC "TABLOIDS," Hypodermic Syringe with 2 Needles, and Mortar and Pestle for crushing the "Tabloids" 5/0

Ditto ditto *fitted complete*, and filled with 12 Tubes of the Hypodermic "Tabloids," selected from the list 15/0

No. 9, arranged *to contain* 6 Tubes of the HYPODERMIC "TABLOIDS," Hypodermic Syringe with 2 Needles, and Mortar and Pestle for crushing the "Tabloids" 5/0

No. 9, arranged and *fitted complete*, and filled with 6 Tubes of Hypodermic "Tabloids," selected from the list .. 12/0

No 13, arranged *to contain* 12 Tubes of the HYPODERMIC "TABLOIDS," and solid Silver Hypodermic Syringe . 4 0

Ditto ditto *fitted complete*, and filled with 12 Tubes of Hypodermic "Tabloids," selected from list 20 0

No. 21, arranged *to contain* 9 Tubes of the HYPODERMIC "TABLOIDS," Hypodermic Syringe with 2 Needles, 2 small Vials for water or ether, Mortar and Pestle 5 0

Ditto ditto *fitted complete*, and filled with 9 Tubes of Hypodermic "Tabloids," selected from the list 15 0

No. 26, *fitted complete* with 4 Tubes of the HYPODERMIC "TABLOIDS," Hypodermic Syringe and Needles, with Mortar and Pestle 11 0

No. 30, arranged *to contain* 15 Tubes, assorted, price 16 0

(The last named is our most recent design—The Miniature—an exceedingly compact and practical little case, and one we can heartily recommend as an ideal *multum in parvo* armamentarium.)

INHALERS.

THE VEREKER CHLORIDE OF AMMONIUM INHALER.—Simple in construction, easily manipulated, does not require constant re-filling, and delivers if properly filled, absolutely neutral vapour of Ammonium Chloride. Price 5 -, in box.

THE PIPE INHALER (as designed by Dr. Stenson Hooker), for the inhalation of Ammonium Chloride Vapour, is in the form of a pipe made of earthenware, the two elements—acid and alkali—being placed in the bowl, and separated by a septum. The vapours are drawn through a filter of sponge moistened with water. Price 5/6.

THE PINOL-EUCALYPTIA DRY INHALER.—This is a glass tube, cigar-shaped, filled with absorbent material, upon which any volatile inhalant is dropped. The patient as he inspires through the tube, draws air which is well impregnated with the particular drug employed. Pinol and Eucalyptia are much used in combination in cases of bronchitis, asthma, and pulmonary affections generally. More recently we have received competent testimony that this same combination is an effective preventive against malarial attacks. In boxes, with a bottle each of Pinol and Eucalyptia, at 1/2 each.

MENTHOL ORO-NASAL INHALER, as suggested by Dr. Macnaughton Jones, has, as the name indicates, attachments for both oral and nasal use. A bottle of the Menthol Solution, with camel's hair brush, is also included in the equipment. Supplied at 3/- each.

POCKET MENTHOL INHALER is a glass tube containing absorbent material, protected by a nickel-plated tube. As an effective and simple inhaler, this little instrument is very popular. 1/- each.

HOT-AIR INHALER.—Designed by the late Sir Morell Mackenzie for the inhalation of super-heated steam carrying the vapour of volatile inhalants; has proved of great service in phthisis, bronchitis, and pulmonary attacks. We shall be glad to send a description of the apparatus on request. Supplied at 14/- each.

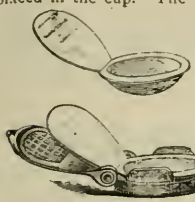
WALLICH'S STEAM INHALER presents several advantages over ordinary patterns, is equally adapted to cold as well as steam inhalations; the full benefit of any inhalant used is secured. A pamphlet, descriptive of the Inhaler, and a useful collection of formulæ will be sent on request. Price 4 -; with Oro-nasal Respirator, 2/8 extra.

WAFER MEDICINE CACHETS (B., W. & CO.).

(E. GORLIN'S PATENT.)

An ingenious yet simple method of taking disagreeable medicines in the form of liquid, powder, or "Tabloids." To charge a Cachet, which is composed of pure rice starch, it is spread out in the folders as shown in the accompanying illustrations, and the contents

placed in the cup. The lid of the Cachet is then wetted, and brought over by means of the lid of the folder. When pressed on the top of the cup it is completely sealed, and prevents egress of the contents into the mouth. Just prior to taking the Cachet, it should be dipped in water and then placed on the tongue, and may then be easily swallowed with a little water.



B., W. & Co. Wafer Medicine.

The BRITISH MEDICAL JOURNAL says they "are well adapted for the administration of unpalatable powders or liquids."

The LONDON MEDICAL RECORDER reports:—"They will be welcome to medical men and to their patients, and also to pharmacists, whose labours they will lighten."

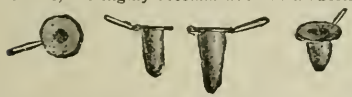
Supplied to the Medical Profession in boxes of 100, at 1s. 2d. per box.

ABSORBENT MATERIAL.

Lawton's Absorbent Cotton Wool differs from the ordinary forms of cotton in that it possesses a beautiful downy flocculence. Its adaptability for surgical or gynæcological work can be appreciated when we state that it will take up nearly 14 times of blood, water, or pus. Its absorbtive power can easily be demonstrated by dropping a small tuft of it on water. It is highly recommended for the preparation of medicated filaments, tampons, or bougies, to carry such bodies as Creolin, Phenol or Phenol Compounds, Iodoform, &c. A simple immersion into a solution, and exposure to the atmosphere until dry, is all that is required for this purpose. Lawton's Absorbent Wool, carrying Eucalyptia or Pinol, or Terebene or Phenolised Compounds of these, answers remarkably well, also, as a filter in respirators. Issued in packets of 1 oz., 2 oz., 4 oz., and 16 oz., at 5d., 8d., 1s. 1d., and 3s. each.

ARTIFICIAL EAR DRUMS (WARD COUSINS).

These effective membranes, which consist of cone-shaped skeleton drums of a delicate texture, are highly recommended as a substitute for the natural drum in perforation of the natural membrane and to assist the hearing in deafness caused by other affections; also as an antiseptic in disease of the middle ear attended with suppuration. These drums were exhibited and practically demonstrated in the Section of Otology at the Leeds meeting of the British Medical Association. They are inexpensive, and may be easily inserted by the patient. The drum when *in situ* causes no discomfort. They are made in three sizes, Nos. 1, 2, and 3, the last being the largest.

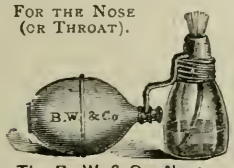


Supplied in boxes containing three dozen drums, at 9d. per box; retail, 1s. Combination Blunt Probe and Nippers for insertion and extraction, price 8d.; retail, 1s.

THE PAROLEINE ATOMISERS.

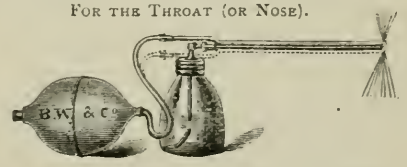
These elegant little instruments are intended for applying to the naso-pharyngeal and laryngeal mucous surfaces a fine spray of an oily solution, or of plain "Paroleine" (B., W. & Co.), which is a basic paraffin oil, free from odour, colour, and taste.

FOR THE NOSE (OR THROAT).



The B., W. & Co. Naso-Pharyngeal Paroleine Atomiser, 3s. 6d. each.

FOR THE THROAT (OR NOSE).



The B., W. & Co. Post-nasal Paroleine Atomiser, 5s. 2d. each.

For use with these Atomisers, Paroleine has been found highly satisfactory. Paroleine is a perfectly colourless, tasteless, and odourless fatty paraffin oil, neutral in re-action. It

is extensively used by laryngologists as a solvent for essential oils, stearoptenes, etc., for application in vapour form to the mucous surfaces of the respiratory tract.

The JOURNAL OF LARYNGOLOGY AND RHINOLOGY says:—"This instrument has delighted us. We have so often asked for a spray that would throw a fine vapour of an ointment or oily basis; and those which are offered are anything but satisfactory. The spray before us meets all our wants. No laryngologist's table will be complete without one of these beautiful sprays."—*December*, 1890.

THE KEPLER MALT EXTRACT

Is considered as "Standard" in the comparative estimation of Malt Extracts.

The Extract of Malt prepared according to the Kepler process is always uniform and reliable, and is obtained from the finest Malted Barley only. The introduction of the Kepler process marked a distinct advance in the method of preparing this valuable digestive and nutritive agent; since, still further progress has been made in the path of improvements, and the Malt Extract (Kepler), as issued to-day, represents fully all the valuable constituents to be found in malted grain—the Albuminoids, the Natural Phosphates, Maltose, Dextrine, and the important amylolytic ferment, Diastase. The Kepler Extract of Malt is not in any sense a fermented product; its nutritive properties are not sacrificed to the formation of ethylic alcohol, and the greatest precaution is observed that the heat employed shall not ruin the diastase, or destroy the albuminoids by coagulation. As a food in itself, as an invaluable aid to the digestion of other aliments, the popularity of the Kepler Extract of Malt is in itself proof positive of its value and efficiency.

As an instructive commentary upon what has been already said above, the following paragraph, taken from "Braithwaite's Retrospect of Medicine," for January to June, 1890, is interesting:—

"KEPLER EXTRACT OF MALT.—During the past year the value of Kepler Extract of Malt has been more generally recognised and its use has greatly increased. It was found particularly valuable in the convalescent stages of influenza, and was often relished and digested when no other food could be retained. Many practitioners found it to be their sheet anchor, and would have been in despair but for its assistance. In some of the severest cases in which it was given the patient rapidly recovered, and returned to his work with none of the weakness and depression which was felt by many persons who had not had the advantage of taking it. The manufacturers of Kepler Extract have recently introduced a much thinner preparation, Essentia Malti, clear and thin like the finest virgin honey. This was to overcome the objection some invalids made to the thick and sticky Kepler Extract, and in many cases it has been relished and been found most useful. A great future undoubtedly awaits both preparations, which have a distinct *rôle* to play, and which cannot be superseded by beer or any of the many fermented preparations of malt."

According to HELBING'S PHARMACOLOGICAL RECORD just issued (Dec. 24th, 1890), "the proposed pharmacopœial standard for Malt Extract is easily reached by the Kepler Malt Extract."—Dr. F. W. PASSMORE, Ph.D., and Mr. H. HELBING, F.C.S.

The authors conclude their observations as follows:—"*The comparison shows that the Kepler Extract of Malt is an excellent preparation, which although closely approached by other products in one or the other respect, asserts its great superiority when all the factors are taken into consideration.*"

The Kepler Malt Extract is supplied to the Medical Profession in bottles of ½ lb. and 1½ lb., at 1s. 8d. and 3s. each. Retail 2s. 6d. and 4s. Prices of the combinations vary according to the formula.

MALTO RICINE (KEPLER).

Castor Oil has long been considered a valuable laxative, especially for parturient women and children, and although much dreaded on account of its nauseating character, was nevertheless most effective in producing a comfortable motion of the bowels. Taking as our guide the Kepler Solution of Cod Liver Oil, wherein the oil is rendered palatable through being dissolved in Extract of Malt, we performed similar experiments with Castor Oil, and in the Malto Ricine the repugnant odour and flavour of the oil are thoroughly hidden; moreover, the aperient action is enhanced by the laxative effect of the Extract of Malt. It is palatable, and therefore readily taken by children or fastidious patients. The demulcent, mild, aperient, and soothing properties of the Malt Extract render it especially adapted for mixing with and masking the disagreeable properties of Caster Oil, thus rendering it agreeable to those unable to take the clear oil.

Malto Ricine is more reliable in effect, since the whole of the oil passes into the intestinal canal and readily excites peristalsis. It never excites nausea or vomiting.

Malto Ricine is supplied to the Medical Profession in 4 oz. and ½ lb. bottles, at 9d. and 1s. 8d. each; Retail, 1s. and 2s. 6d.

MALT ESSENCE.

(Syn.: ESSENTIA MALTI, KEPLER.)

THOUGH originally intended as a non-intoxicating and more nutritious substitute for ordinary malt liquors (with which it is not to be compared if the chemistry of either can be any indication of possible therapeutic value), the KEPLER ESSENCE OF MALT has gradually, by a selective process, become exceedingly useful in many other ways. Its superior diastasic property and its large percentage of tissue-forming material in the presence of those desirable mineral phosphates so essential to the human organism, while it is absolutely non-intoxicating, made the KEPLER ESSENCE OF MALT at once a great favourite and a formidable competitor with the best and most reputed brands of nourishing stouts and ales. Now, after a reasonable probationary period, its success in clinical dietetics is assured, and no more pleasant aliment or powerful digestive stimulant can be offered to-day to the dyspeptic, the ill-nourished, the sick, the invalid, or the convalescent. We have said on previous

The Ideal Nutritive Beverage.

occasions that two fluid ounces of the KEPLER ESSENCE OF MALT is equal from any point of view to a pint of the best ale or stout; and in this statement of opinion we have ample confirmation by many practitioners who have lately spoken to us on this subject. For children especially it is a great boon; its syrup consistence and pleasant flavour make it at once eligible as a vehicle for the administration of objectionable or nauseous medicines, such as iron, quinine, pepsin, strychnine, iodide of iron syrup, aperients, and many other agents which will readily occur to the practitioner or pharmacian. It should be well remembered that, unlike those malt liquors which KEPLER ESSENCE OF MALT naturally displaces, it does not undergo the acetous fermentation, nor is it liable to any organic change which would endanger its "keeping" qualities. In fact, so far from this, it will be found to correct that tendency to acetous fermentation which is caused by the incomplete digestion of starchy material and ordinary sugars.

Kepler Essence of Malt *supplied to the Medical Profession in champagne pints and quarts, at* 1/2 *and* 2/- *each. Retail* 1/6 *and* 2/6.

KEPLER SOLUTION

OF

COD LIVER OIL in EXTRACT OF MALT.

As the Oil is completely dissolved, it does not derange digestion like emulsions and oil in bulk, but agrees perfectly with the stomach, and is soon absorbed.

"An ideal form for administration of fat."—
BRITISH MEDICAL JOURNAL.

"The most palatable and easily digested."—
MEDICAL TIMES AND GAZETTE.

"Many could take it easily who could not take the oil."—
THE LANCET.

"Not an *Emulsion*; its constituents are in a condition of more intimate admixture—namely, that of *Solution*."—
E. GODWIN CLAYTON, F.C.S.

Kepler Extract of Malt and Kepler Solution supplied to the Medical Profession in ¾-lb. and 1½-lb. bottles at 1/8 and 3/- each; Retail, 2/6 and 4/-.

Trial Specimens supplied to the Medical Profession upon request

BURROUGHS, WELLCOME & Co.,

Manufacturing Chemists, Exporters & Importers.

Snow Hill Buildings, LONDON, E.C.

FISHERTON HOUSE ASYLUM, SALISBURY.

FOR PRIVATE INSANE PATIENTS.

Terms, 16s. Weekly.

APPLY TO DR. FINCH.

SHAFTESBURY HOUSE,

FORMBY-BY-THE-SEA,

Near LIVERPOOL.

Private Asylum Licensed for the Treatment of Ladies and Gentlemen mentally afflicted.

VISITING PHYSICIAN—THOMAS R. GLYNN, M.D. Lond., F.R.C.P. Lond.,
Senior Physician Liverpool Royal Infirmary.

CHAPLAIN—Rev. J. B. RICHARDSON, M.A., Green Lea, Formby.

Plans approved by Commissioners in Lunacy.—This Asylum has been erected from plans approved by the Commissioners in Lunacy, and in every possible way in accordance with the modern ideas of the treatment of Mental Disease.

The Rooms throughout the building are large, airy, cheerful, light, very brightly furnished, and, as the walls are tinted in various colours, there is a complete absence of anything approaching to dulness or gloom.

Warming, Ventilation, and Drainage.—Each Sitting Room, Dormitory, and Corridor is warmed and ventilated by special means besides the ordinary fireplace, and the drainage is perfect.

Sea Air.—This Asylum, being situated about a mile from the sea, Patients have the benefit of sea air.

Private Rooms. — Private Rooms and special attendants provided whenever required.

Accommodation for Friends.—Friends of patients wishing to be near during treatment can be accommodated.

Grounds and Amusements.—There are about ten acres of ornamentally laid out Pleasure Grounds, which afford ample privacy and room for exercise, Lawn Tennis and other amusements.

Medical Opinion.—The Asylum has been visited by a large number of medical men in Liverpool and neighbourhood, all of whom have expressed themselves as highly pleased with the arrangements.

Train Service.—Formby Station is about ten minutes' walk distant. Trains run to and from Formby nearly every half hour to Southport, as also to the Exchange Station, Liverpool, and there is now direct communication with the North, and with London, and the South of England by means of the London and North-Western Railway.

Terms, &c.—Terms and all information can be obtained from

STANLEY A. GILL B.A., M.D., M.R.C.P. Lond.
Resident Physician

CHURCH STRETTON ASYLUM,

STRETTON HOUSE, CHURCH STRETTON, SHROPSHIRE.

ESTABLISHED 1853.

This institution is exclusively for the reception of Gentlemen of the Upper and Middle Classes. Its popularity and success must be attributed in a great measure to the open manner in which it is conducted: instead of being a place to be avoided, as asylums were in times past, it is the resort of the better class families for recreation and amusement, and we are of opinion that the proprietor has taken a step in the right direction, and one that will still further command the confidence of the public by providing accommodation for the friends of patients, who will thus have an opportunity of satisfying themselves as to the mode of treatment and the comforts afforded. The charges are moderate, according to the requirements of the patients.—FROM THE MEDICAL PRESS.

Church Stretton is situated in the Highlands of Shropshire (600 ft. above sea level), amidst the most charming mountain scenery, and has a very invigorating and bracing atmosphere. One great object of this institution is to find healthy and congenial occupation for its patients, and thus assist the special medical treatment. Every inducement is held out for patients to interest themselves, either on the large farm attached to the house, and which supplies direct both beef, mutton, and agricultural produce; or in the workshops, in gardening, &c. There are numerous tennis courts and a private cricket ground; carriage exercise is provided for those who desire it, and walks of several miles in length can be had in the grounds and on the hills without going on the public road. One result of these facilities is that just 50 per cent. of the patients are on parole (having almost complete liberty) or have fixed occupations to interest themselves in daily. Thus the almost unavoidable feeling of restraint is very largely decreased, and daily contact with the outside world removes any flavour of seclusion.

The house has recently been enlarged and renovated, handsome suites of rooms being provided for first-class cases. Medical men are cordially invited to visit this Asylum and judge of its advantages for themselves; if desired, an album containing photographs of the house and surrounding scenery will be forwarded.

The friends of patients and a few voluntary patients can now be received as boarders. Church Stretton is on the Shrewsbury and Hereford main line, 12 miles from Shrewsbury, and can be reached from London (Euston or Paddington) in 5 hours, Birmingham 1¾ hour, Bristol 4 hours, Liverpool and Manchester 2½ hours, Edinburgh and Glasgow 8 hours, Derby and Nottingham 5 hours.

Apply to the Supt., C. W. CAMPBELL-HYSLOP, Stretton House, Church Stretton. Medical Supt., DR. HORATIO BARNETT, M.A., M.B. and B.C. (Cantab), M.R.C.S. and L.R.C.P. (Lond).

Attendants Supplied on Shortest Notice.

FOR YEAR ENDING SEPTEMBER, 1892, 65 PER CENT. OF ADMISSIONS DISCHARGED CURED.

THE GROVE, JERSEY.

Proprietor—F. NEEL GAUDIN, M.P.C., M.R.C.S. Eng., L.S.A.

A **HOME** for a limited number of Ladies and Gentlemen of the Upper Classes afflicted with *Nervous and Mental Diseases.*

The Estate is healthily situated on the high ground, 2 miles from St. Heliers, commanding extensive views over St. Aubin's Bay with its islet Forts, and the towns of St. Heliers and St. Aubin's with their shipping, and comprises a Park of 11 acres, besides gardens and farm land, and a Mansion of handsome proportions in which all is arranged with a view to the *comfort and privacy of home.*

The Grove (owing to its Southern aspect and protection from the North and East, together with the natural mildness of the Jersey climate) is especially suited to those whose constitutions are delicate or temporarily reduced through Alcohol, Drugs, Hysteria, or Nervous and Mental Diseases, whilst from its lofty situation the air is *bracing and invigorating.*

The Amusements and Occupations include Cricket, Tennis, Boating, Yachting, Billiards, Gardening and Farming, &c.

Sea Bathing (hot and cold), private machines on beach, 10 minutes' walk.

Associated and single rooms, or *self-contained suites of 2, 3, or 4 rooms.*

Voluntary Boarders and Friends of Patients can be accommodated. Horse and carriage exercise. Special arrangements can be made for Ladies and Gentlemen to keep their own private horses and carriages.

For Terms and particulars (descriptive, local, means of access, &c.), apply to—

CHAS. CALDECOTT, M.B., B.S. Lond., M.R.C.S., Res. Med. Sup.,

THE GROVE, JERSEY.

INCORPORATED BY *ROYAL CHARTER.*

JAMES MURRAY'S ROYAL ASYLUM, PERTH.

CHAIRMAN - - - THE VISCOUNT STORMONT.

This Asylum for PRIVATE PATIENTS only, is beautifully situated in the immediate vicinity of Perth, in the midst of extensive PLEASURE GROUNDS, which are surrounded by fields of the HOME FARM.

The main building has been modernized and enlarged by the addition of TWO WINGS for the reception of acute cases, fitted with most recent improvements in the means of treatment of the Insane, so as to render it an EFFICIENT HOSPITAL as well as a COMFORTABLE HOME.

The MANSION HOUSE of KINCARRATHIE, in the neighbourhood, has been taken on lease; and Houses at the Seaside and in the PERTHSHIRE HIGHLANDS are rented annually.

There are ample means of OCCUPATION and AMUSEMENT, and the entire arrangements are of a DOMESTIC CHARACTER.

The RATES OF BOARD vary according to the requirements and circumstances of each case. Those at the Higher Rates have private rooms and special attendance.

The Directors refer the friends of those requiring treatment to the REPORTS OF THE COMMISSIONERS IN LUNACY.

DR. URQUHART, *Physician Superintendent.*

BAILBROOK HOUSE, BATH

For the Care and Treatment of Ladies and Gentlemen Mentally afflicted.

ESTABLISHED 50 YEARS.

Resident Medical Proprietor, LIONEL A. WEATHERLY, M.D., M.R.C.S.

Beautiful Mansion standing in 30 acres of well-wooded Park, with lovely views of Bath and surrounding scenery. Fifteen minutes' drive from G.W.R. and Midland Stations, Bath. *Telephone No.* 49.

Horses and Carriages, Billiards, Lawn Tennis, Fishing, Boating, etc.

Great Improvements have recently been made in house and surroundings, *Vide* Visitors' and Commissioners' Reports.

A NEW WING HAS BEEN ADDED WITH EVERY MODERN IMPROVEMENT.

Terms inclusive from 2½ to 10 guineas per week, according to circumstances of case and accommodation required.

ST. PATRICK'S INSTITUTION,

BELMONTS PARK,

WATERFORD, IRELAND.

FOR THE TREATMENT AND CURE OF

Mentally-Affected Gentlemen.

Th's Institution, the first of its kind in Ireland, has been fitted up with the most modern appliances to secure, as far as possible, the well-being and a superior degree of comfort to its inmates.

The **ROOMS** are spacious, well ventilated, heated, and suitably furnished. The **GROUNDS** are in a cheerful and very healthy locality, surrounded by varied and beautiful scenery, and command an extensive view of the City and Harbour of Waterford.

For Prospectus and Medical Certificates, apply to the Revd. Superior, as above.

PLYMPTON HOUSE,

PLYMPTON, SOUTH DEVON.

ESTABLISHED 1834.

Plympton House is the only Private Asylum in Devon and Cornwall. It is licensed for 23 male and 21 female patients. The house, which is a fine old country mansion, is situated in the midst of an estate of 30 acres of Park land; is five miles from Plymouth, and one mile from the Plympton Station of the Great Western Railway. The climate of South Devon is such as to recommend this Asylum as being particularly fitted for Insane Persons who are the subjects of Pulmonary Diseases. Male Patients can be received at present on particularly favourable terms.

Letters and Telegrams should be addressed to

Dr. ALDRIDGE, PLYMPTON, SOUTH DEVON,

The Resident Physician and Proprietor.

CHURCH STREET, EPSOM.

This Home has been established over forty years for the Care and Treatment of Ladies suffering from Mental Ailments.

Terms, etc., on application to Dr. DANIEL, who resides in the house.

THE WARNEFORD ASYLUM, OXFORD,

FOR THE CARE AND TREATMENT OF INSANE OF BOTH SEXES OF THE UPPER AND MIDDLE CLASSES.

President: The Right Hon. the Earl of Jersey.
Chairman of Committee: The Rev. the Warden of New College, Oxford.

THE Asylum is pleasantly situated on Headington Hill, and has been recently enlarged, the new accommodation being arranged, as far as is compatible with the requirements of an Asylum, in the manner of an ordinary private residence.

The ordinary charge for Patients is £2 2s. a week, but the Committee have power to increase or reduce the charges at their discretion. When a reduction of the ordinary charge is asked, a statement of the circumstances of the Patient should be made by letter to the Committee.

Special Rooms and Attendants may be had if required.

For further particulars apply to the Medical Superintendent,

J. BYWATER WARD, M.D.

BARNWOOD HOUSE,

GLOUCESTER.

A Registered Hospital for Private Patients only, of the upper and middle classes. Arranged and furnished with all the most approved appliances for the treatment, comfort, and amusement of the inmates. Within two miles of the Railway Station, and easily accessible by Rail from London and all parts of the kingdom. Is beautifully situated at the foot of the Cotswold Hills, and stands in its own grounds of 240 acres.—For Terms, &c., apply to

JAS. GREIG SOUTAR, M.B., C.M.
Resident Superintendent.

HARPENDEN HALL,

HERTS.

A PRIVATE ASYLUM FOR LADIES.

It is four miles from St. Alban's, and twenty-five from London, on the Midland Railway.

A. MACLEAN, *Proprietor and Medical Superintendent.*

BEDFORD,
BISHOPSTONE HOUSE.

(Licensed for the reception of Ten Ladies.)

This house is adapted for the care and treatment of every form of mental unsoundness and combines the efficiency of an Asylum with the comfort of a refined home. The staff of Attendants is so numerous as to dispense with mechanical restraint and seclusion. The limited number of patients received admits of more individual attention being given than is practicable in large institutions. The Lunacy Act of 1890 allows nervous cases, and such as cannot be properly certified, to be received as Boarders without certificates.

DR. & MRS. SIMPSON CRAIG, Resident Proprietors.

MIDLAND RAILWAY—ONE HOUR FROM ST. PANCRAS.

Private Asylum,
FIDDINGTON HOUSE,
MARKET LAVINGTON, WILTS.

This is a quiet and refined Home for a limited number of Ladies and Gentlemen, situated most pleasantly and healthily in about thirty acres of pleasure-grounds, gardens, &c. The domestic comforts and arrangements are personally superintended by Mrs. HITCHCOCK. Every out-door and in-door amusement is provided for the patients, including tennis, croquet, billiards, music, dancing, and carriage exercise.

There is now a Vacancy for a Lady or Gentleman.—For terms apply

C. HITCHCOCK, M.D., Prop. and Resident Med. Supt.

Boarders received under the new Lunacy Act without certificate.

NORTHWOODS HOUSE,
WINTERBOURNE, near Bristol.

PRIVATE ASYLUM FOR LADIES AND GENTLEMEN.

Situated in a large park in a healthy and picturesque locality, easily accessible by cab from Bristol, or from Fishponds, Yate, or Patchway Stations.

The Building is FIREPROOF.—For further information, see London Medical Directory, pp. 1803, and for Terms, &c., apply to Dr. Eager, Resident Physician.

THE RETREAT, FAIRFORD,

GLOUCESTERSHIRE.

1 *HOUR FROM OXFORD,* 12 *MILES FROM SWINDON.*

ESTABLISHED 60 YEARS.

Is licensed for the reception of a limited number of Ladies and Gentlemen mentally afflicted. Home comforts. Grounds cheerful and extensive, and always accessible to the patients. Locality very healthy. Terms moderate, and according to the nature of the case and the accommodation required.

APPLY TO **D. ILES,** *Medical Proprietor.*

COUNTY ASYLUM,

GLOUCESTER.

Private Patients are now received into this Asylum.

Particulars on application to the MEDICAL SUPERINTENDENT, COUNTY ASYLUM, GLOUCESTER.

ABBEY GREEN, JEDBURGH.

Established 1871.

Dr. BLAIR receives into his House a limited number of Patients suffering from Mental and Nervous Disorders.

Dry Climate. Beautiful District. Terms Moderate.

PECKHAM HOUSE,

PECKHAM, S.E.

Extensive arrangements are made in this Asylum for the reception of Private Patients of both sexes.

Terms from 25/- per Week.

Further particulars can be obtained upon application to the RESIDENT PHYSICIAN.

THE GOVERNORS OF
THE
ROYAL HOSPITAL OF BETHLEHEM

Are prepared to receive a limited number of Patients at Two Guineas a week, inclusive.

All particulars may be obtained from the Resident Physician or the Steward of the Hospital.

ST. GEORGE'S ROAD,
LONDON, S.E.

WONFORD HOUSE (HOSPITAL FOR THE INSANE),
NEAR EXETER.

A Registered Hospital for the Upper and Middle Classes.

This Institution is situated in a beautiful and healthy locality, within a short distance of the City of Exeter. There is comfortable accommodation at moderate rates, both in the Hospital itself and at Plantation House, Dawlish a seaside residence on the South Devon Coast, affording more privacy, with the benefits of sea-air, and a mild and salubrious climate. Private Rooms and Special Attendants provided, if required. Voluntary Patients or "Boarders," not under certificates, also received.

For Terms, &c., apply to P. MAURY DEAS, M.B., M.S. Lond., Resident Medical Superintendent.

MARSDEN HALL.

A PRIVATE ASYLUM for the care and treatment of a few Patients of both sexes suffering from Mental Disorders.

The grounds are extensive (seven acres) and of rare beauty, the views picturesque, and the situation specially healthy; farm attached. Only a limited number of patients received. Home comforts.

Easy access from Nelson Station on the Lancashire and Yorkshire Railway; also from Colne on the Midland.

For terms, &c., apply to Mrs. BENNETT, Widow of the late Proprietor, or to the MEDICAL SUPERINTENDENT,

Marsden Hall, Nelson, Lancashire.

DOWNSIDE LODGE, CHILCOMPTON,
Near BATH.

This Home (long established) for the Training and Education of Girls of the Upper Classes, who are Mentally Afflicted and unfit for ordinary schools, is under the personal care and superintendence of Miss PAGE, who has had much experience in such cases. References to Medical Men and others.—Terms, &c., on application.

SAMPLES FREE ON APPLICATION.

REGISTERED COMBINATION

TEMPERATURE & DIET CHARTS

With Clinical Diagrams, specially arranged for Hospital use.

Designed by ROBERT SIMPSON, L.R.C.P., L.R.C.S.

Contain on the front an improved *Temperature Chart for four weeks*, a *Diet Chart*, *Instructions to Nurses*, etc., and at back two full length *Clinical Figures*, including Outlines and Skeleton (front and back), with viscera printed in red ink, and separate outlines of *Head*.

PRICE LIST.—*In ordering, please quote the number.*

	Per 1000	500	250	100	50	less ea.
No. 7.—CHARTS, complete, with Figures on back in two colours	36/-	20/-	11/-	5/-	3/-	1½d.
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Fiftieth Thousand. *(Samples free on application.)*

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REGISTERED POCKET CHARTS,

FOR BEDSIDE CASE TAKING.

Compiled by ROBERT SIMPSON, L.R.C.P., L.R.C.S.

These Charts provide a method of recording important cases without loss of time and with little trouble.

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No. 1.—50 CHARTS, folded for Pocket Case .. .. post free, 2 6
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Special quotations to Hospitals taking not less than 250 Charts, unfolded.

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A HOME AND SCHOOL FOR 600 IMBECILE YOUNG PERSONS OF BOTH SEXES.

Under the Patronage of Her Majesty the Queen.

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BRUNTON HOUSE, Lancaster, is a Branch Establishment of the ROYAL ALBERT ASYLUM. With its picturesque surroundings, it is a charming residence for Imbecile Youths of a higher grade of intelligence, who can be well associated; and for special Private Pupils of the Upper Classes, it combines the retirement and comforts of a PRIVATE HOME, with all the facilities for education, training, and amusement of a large Public Institution under responsible management.

Extensive private grounds; salubrious and picturesque situation, with charming views of Morecambe Bay, the Lake Mountains, etc.

Chairman of the Central Committee of the Royal Albert Asylum:
The Right Hon JOHN T. HIBBERT, M.P.
Medical Superintendent: G. E. SHUTTLEWORTH, B.A., M.D.

For Terms and other information, apply to
JAMES DIGGENS, SECRETARY.

THE SOUTH DEVON HEALTH RESORT.

BISHOP'S TEIGNTON.

(TEIGNMOUTH THE NEAREST STATION.)

This Establishment has now the reputation of being unique as a Health Resort, and is strongly recommended for those who need rest and pleasant, healthful change.

The late Right Hon. Lord MOUNT TEMPLE says in his testimonial that "it has all the comfort and charm of a gentleman's country home."

Turkish and other Baths, Lawn Tennis Courts, beautiful Private Grounds.

Sea and moorland air. Sheltered from N.E. winds.

Medical Men who may deem the place desirable for any of their Patients may rely upon their instructions being faithfully carried out

Resident Medical Superintendent, W. DALE, M.D., London.

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EDUCATION AND

HOME COMFORTS.

BOYS OF FEEBLE INTELLECT.

BEARSTED HOUSE, BEARSTED, near Maidstone.

Superintendent and Proprietor: G. T. A'VARD,

Fourteen Years' experience at, and late Head Master of, Earlswood Asylum.

"I can with the greatest confidence recommend any parent who has a child with a clouded intellect to send it to Bearsted House."
JOHN JOHNSTON, Surgeon.

A Doctor writes to the *Lancet*:—"A better place for weak-minded boys there cannot possibly be. A personal visit has convinced me that many parents with afflicted children would be rejoiced to hear of such a home for them."

Wales, 1891.

A lady writes:—"My son has now been under your care for four-and-a-half years, and I cannot help writing to express my gratitude to you for your kindness and success in treating him."

From ROBT. JONES, Esq., M.D. Lond., M.R.C.S.
"I have heard Mr. A'VARD spoken of by the friends of patients in the highest estimable manner. I consider him a man of great integrity."

From BEN. HALL, Esq., M.B. Lond.
"Mr. A'VARD has a peculiar tact in his dealings with the feeble-minded which enables him to gain an influence over them that I have not seen in any other person."

SAMUEL KENWORTHY, Esq., Editor of *Healthy Life*, writes:—"It is difficult to conceive a more suitable place for boys of feeble intellect."

The Rev. N. C. writes:—"We all find him improved in many ways, but more particularly in the point where he was most of all deficient, that of obedience. There was no mistaking the genuine pleasure with which he hailed 'Dear old Bearsted' when we arrived at the station on his returning to you."

St. John's Wood, 1891.

"DEAR MR. A'VARD,—I am so pleased with the improvement in my boy. He is altogether different, and he tells me he has never been as happy in his life as he has been this year with you."

A Gentleman of the Press writes:—"The evident confidence you had inspired in those under your charge; also the bright happy faces and the at-homeness of all."

Hotel Metropole, London, *Jan. 7th*, 1890.

"MY DEAR MR. A'VARD,—I am very pleased indeed to have found my brother so well. I was also pleased to see the regard he and the other boys have for you. Your establishment only requires to be known to ensure you the success I wish you."

Folkestone.

A Father writes:—"I was wonderfully pleased at the treatment my boy received, and at the progress he has made. I consider Bearsted House one of the finest Institutions for afflicted children, and I can recommend it with the greatest confidence."

Bearsted House, *30th Sept.*, 1892.

"On the advice of doctors in London I have just brought my son here, and am leaving with the assurance that the boys are in excellent hands. There are no bad cases, and the lads appear cheerful and happy, with every comfort about them. I write this in justice to Mr. A'VARD, feeling there is no other such place to be found in England—having made searching enquiry." R. D., Captain Royal Navy.

BEARSTED HOUSE stands on its own grounds of four acres, and is pleasantly situated. A Medical Gentleman remarked of Bearsted: "It is one of the prettiest and healthiest villages in England." The house is commodious and the rooms are lofty. The grounds are secluded and not overlooked in any way.

Bearsted Station is on the London, Chatham & Dover Railway from London—Victoria, Holborn Viaduct, and Ludgate Hill (without changing carriages), and is accessible from the South and the South-East Coast *via* Ashford. BEARSTED HOUSE is Five Minutes' walk from Bearsted Station.

Liberal Arrangements made with Medical Men introducing Pupils.

DEESIDE HYDROPATHIC ESTABLISHMENT,

HEATHCOT, near ABERDEEN.

The Climate of Deeside is the most healthy and bracing in Great Britain. Residents in this Establishment have the privilege of preserved Salmon and Trout Fishing in the River Dee, as it runs through the Estates of Heathcot and Ardoe, a distance of two miles.

The Turkish and other Baths are constructed with all the latest improvements necessary for the practice of Hydropathy.

Terms per week, £2 10s.; for two having same bedroom, £2 5s. each. From 1st November to 30th April, £1 15s.

For particulars apply to Dr. STEWART, Medical Superintendent, Heathcot, near Aberdeen.

THE HAMMAM OR TURKISH BATH,

76, JERMYN STREET, S.W.

(FOUNDED 1852.)

Total number of Bathers to 31st Oct., 1892—1,005,826.

The Bath is open daily from 7 a.m. to 9 p.m.; on Sunday from 9 a.m. to 3 p.m. (Entrance by side door.)

TERMS OF ADMISSION.

Annual Ticket .. .. £8 8s.

7 a.m. to 7 p.m. .. { Single Ticket 4s. / Twelve Tickets 36s. (3s. each.) } After 7 p.m. Single Ticket 2s.

Members of the Medical Profession (on presenting their card) can obtain Medical Tickets at the reduced rate of 2s.

No Tickets issued after 8 p.m. Bath Closes at 9 p.m.

CAFE, OR RESTAURANT.

Breakfasts and Luncheons are served from 8 a.m. to 5 p.m., according to a fixed tariff. Oriental dishes are supplied. Coffee, Chocolate, Sherbet, Tobacco, and Light Wines are also sold during the hours the bath is open.

Hair Dressing Gallery in the Bath for the use of bathers.

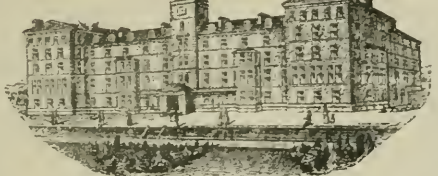
Messrs. GREGORY & MACKINTOSH, Chiropodists, of 132a, Regent Street, have, for the convenience of Bathers, a private room in the Bath, where they are in attendance daily.

PHILP'S
DUNBLANE HYDROPATHIC,
PERTHSHIRE.

Recently acquired by Mr. Philp, Late Proprietor of the Cockburn Hotel, Edinburgh.

Situated in one of the healthiest and loveliest parts of Scotland, forming a most excellent Winter and Spring Residence. Climate mild and equable, completely sheltered from the north winds.

The arrangements of the House are, beyond all question, the finest in Britain. A most complete system of heating is adapted over the whole house at an average of of 60 degrees.



The Sanitary Arrangements are Perfect.

Recreation and Billiard Rooms, Gymnasium, etc.; Red Ash and Grass Lawn Tennis Courts.

BATHS—Russian, Turkish, Electric, Pine, etc. Massage treatment for Ladies and Gentlemen under experienced London trained attendants.

Within easy access of the Trossachs, Loch Katrine, Loch Lomond, Loch Tay, Loch Earn, etc.

Resident Physician. No Intoxicants allowed. About an hour's rail from Glasgow & Edinburgh.

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Glenburn Hydro, Rothesay, Bute, now re-building, with all the Modern Improvements.

SMEDLEY'S HYDROPATHIC ESTABLISHMENT,
MATLOCK, DERBYSHIRE.

Railway Station:—MATLOCK BRIDGE. Telegraph Office:—MATLOCK BANK.

Physicians:—

WILLIAM B. HUNTER, M.D., &c., W. CECIL SHARPE, M.B., &c., and a House Physician.

The TURKISH and RUSSIAN BATHS are specially adapted in ventilation and otherwise to the requirements of Invalids.

MASSAGE and ELECTRIC TREATMENT are at command.

As a WINTER RESIDENCE this place is specially adapted for sufferers from Chest disorders, Rheumatism, and Gout, affording warm and well-ventilated Public Rooms, Bedrooms and Corridors. The covered Balconies permit open-air exercise in all weathers. There is a large Billiard Room with two tables, a Smoking Room, and an American Elevator, and the Public Rooms and Corridors are lighted throughout by electric light. The numbers during the winter months rarely fall below 130.

For full particulars see the Prospectus, to be had on application to

THE MANAGER.

TRAINED MALE NURSES.

THE HAMILTON ASSOCIATION supplies Trained Male Nurses for Medical, Surgical, Mental and Dipsomania Cases in town or country. Terms, from ONE-AND-A-HALF to FOUR Guineas per week, according to the severity of the case and the experience of the nurse supplied. Also skilled Masseurs by week or hour. Last Annual Report, Rules, etc., post free on application to the Medical Superintendent, 57, PARK ST., GROSVENOR SQUARE, LONDON, W.

THE PEAK
Hydro-Thermal Establishment,
BUXTON.

The Most Central and Healthy Situation in Buxton.

A High-Class Residence for Visitors and Invalids. Massage, Vapour, Douche, and other Baths. This famous establishment possesses all the advantages of a first-class hotel. Electric light. Passenger Lift. Table d'Hôte, 7 p.m., at separate tables. Treatment at this establishment is carried out on strictly professional principles. The Bathing, Massage, and Nursing department is in the charge of a Hospital-trained Superintendent.

MINERAL WATER BATHS.

Thermal Spring situated on the premises.

Physician: **S. HYDE, M.D.** *Telegrams:* "THERMAL, BUXTON."

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For LADY PATIENTS suffering from Intemperance, or from the excessive use of Drugs.

The Institution is managed by voluntary workers: there are no paid assistants. The Income, after paying the expenses, is devoted to the general extension of the work.

Separate arrangements made for Gentlemen and Artizan Patients.

Apply—REV. ARTHUR TOOTH,
WOODSIDE, CROYDON

IRELAND.

ST. ANN'S HILL HYDROPATHIC ESTABLISHMENT,

BLARNEY, COUNTY CORK.

Resident Physician: M. ALTDORFER, M.D.

ESTABLISHED 1843.

CELEBRATED HEALTH RESORT, picturesquely situated on rising ground (sandy soil) and commanding a view of the far-famed Groves and Castle of Blarney. The Woods and Grounds attached comprise over 600 acres, whilst there are several miles of wooded and sheltered walks in the neighbourhood.

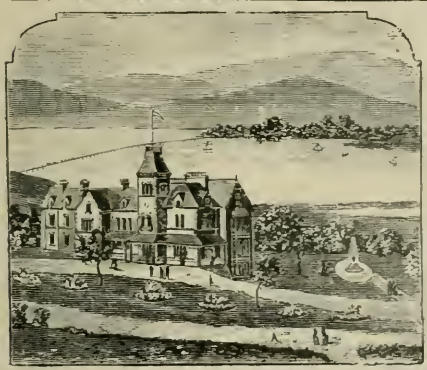
All forms of Hydro and Electro-Therapeutic Applications; Massage and Medical Gymnastics. Turkish, Pine, Brine, Electric and other Baths.

Winters remarkably mild and even; House comfortably heated; Drawing, Reading and Billiard Rooms; Tennis.

ELECTRIC LIGHT THROUGHOUT ENTIRE ESTABLISHMENT.

Terms 2 Guineas to 3 Guineas per week. 10 per cent. discount allowed to Medical Men and their Families.

Prospectus from the Secretary, St. Ann's Hill, County Cork.



The Mentone of England.

HAZELWOOD

Hydropathic Establishment,

Grange - over - Sands,

LANCASHIRE.

Magnificent building in own grounds, 100 feet above sea level. Luxuriously furnished. BATHS, BILLIARDS, ETC. Terms Moderate.

Physician —Dr. Anderson.
Apply Lady Manager,
Miss Lawford.

Climate especially suitable for Chest and Throat Affections.

TUNBRIDGE WELLS.

The Spa Hydrotherapeutic Institution,

standing in its own magnificent grounds of 65 acres, three full sized Tennis Courts (one asphalte), completely fitted with Hydrotherapeutic Appliances and Baths of every description, including Turkish, Electric, Swimming, &c. Massage by trained masseurs and masseuses. The house, which is beautifully situated in an elevated yet sheltered position, with southern aspect, on sandy sub-soil, contains accommodation for 150 visitors, and finely proportioned and lofty reception rooms. Reading, Billiard, and Smoking Rooms. The whole building, together with corridors and conservatories, is heated throughout and maintained at an even temperature during the winter months. Terms from £3 3s. per week inclusive.

Physician - **GEO. LUCUS PARDINGTON, M.D.**

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TRADE MARK.

GEORGE BACK & COMPY

WHISKY.

TELEGRAPHIC ADDRESS
"DIABETES, LONDON."

THE "G.B." Diabetes Whisky

48/-
Per Dozen.
Carriage Paid and inclusive.

"The results of our analyses enable us to state that it is a Whisky of good quality, and that it is free from sugar. The Whisky is very light in colour, does not possess any strong flavour, and the total extractive matter is very low."—*British Medical Journal*, March 28th, 1891, p. 706.

"This Whisky is almost absolutely free from extractive matter. It yielded to our analysis only 0·0275 per cent. of solid extract, and 0.005 of ash. The alcohol amounted to 44·65 per cent. in weight, equal to 91·60 of proof spirit. It has scarcely any colour and certainly deserves its name."—*Lancet*, October 5th, 1889, p. 701.

SOLE PROPRIETORS—

GEORGE BACK & CO.,
Devonshire Square, Bishopsgate, LONDON.

COD LIVER OIL

PETER MÖLLER'S

(BY PATENTED PROCESS.)

Remarkable Researches and Results in Connection with the Manufacture of Cod Liver Oil.

EFFECTS.

Dr. Ollivier, speaking at a meeting of the Academy of Medicine (Paris), insisted emphatically upon the efficacy of Cod Liver Oil, and stated that he had practical proofs of its results on patients of every age. . . It is a powerful tonic, which ensures safety from the effects of damp, cold weather, guaranteeing people from falling easy victims to *la grippe*.

OLD SYSTEM.

Peter Möller still holds first rank among the manufacturers. In the years 1851-1853 considerable attention was called to Cod Liver Oil; but its use was restricted in consequence of the method of its production; which gave a turbid, brownish, uncanny preparation, nauseous to the palate, and sometimes impossible of digestion.

PERSONAL SUPERVISION.

Since then, the introduction by Peter Möller of a new application of steam, conducted under his own personal supervision, has secured the utmost cleanliness in every detail of the manufacture: and Patients and others have been able to obtain a pure, sweet, reliable Oil, when they *insisted* upon having Möller's—well, if they did not insist that was not Möller's fault.

INVESTIGATIONS.

With the name of Möller must always be associated progress, and in forty years many improvements were made. All the so-called substitutes were carefully examined and analysed, emulsions and mixtures, tinctures and essences, the bases of which were everything nearly—*except* Cod Liver Oil; and in the majority of cases no more expensive article than water (Aqua Pura).

"THE ACTIVE PRINCIPLE."

With these investigations it became more and more evident to Dr. Möller (who continued the researches of his father) that the "Active principle of Cod Liver Oil is in the Oil itself," and not, as some have supposed, in the "remaining five per cent." after the separation of the ninety-five per cent. of fat and fat-acids (so-called). He was also impressed with the fact that, excellent as his Oil was, there was more to be accomplished before perfection could be claimed; in fact, no Oil had yet been made which presented the extremely delicate and pleasant flavour of the Oil as it is found in the *freshly boiled livers*.

A NEW OIL.

A new and important laboratory extension was therefore added, with every modern appliance for chemical investigation, and the labours and exhaustive experiments of some ten years being prosecuted with renewed vigour, finally obtained their reward, the practical outcome being an entirely new Cod Liver Oil, lighter in colour, more fluid, more limpid, wholly free from the taste, the "after taste," and the odour of even the best kinds of oil usually sold. The laboratory work has established the fact that the unpleasantness of "repeating" and "after taste" is due to unscientific treatment in the manufacture, by which the formation of Hydroxyles is permitted; by the Patented Process no such contamination is possible, and this oil is therefore SUITED TO THE MOST DELICATE STOMACH.

BY PATENTED PROCESS.

Dr. Möller has obtained Letters Patent for his process of manufacture in England, America, Norway, and other Countries; and although considerable outlay has been incurred in patenting the process, the selling prices have not been advanced.

The Oil is in every respectable chemist's. All bottles are capsuled, and bear the Trade Mark and perforated date as formerly. In case of difficulty or dissatisfaction write to Peter Möller, 43, Snow Hill, London, E.C.

DIABETES.

BONTHRON'S DIABETIC BREAD & BISCUITS.

Dr. PAVY, in his recent work on "Diabetes," p. 245, says —

"Mr. BONTHRON, of 106, Regent Street, has recently succeeded in producing some Gluten Biscuits and Bread which are more eatable than anything of the kind I have ever yet met with. The Biscuits present somewhat the character of a cracknel; they eat short and crisp, and are really reducible in the mouth; having no unpleasant taste; and, consumed with other food, possess the power of cleansing the palate. The Bread is moist, and will not keep good for more than about ten days. Its consumption therefore involves a frequent supply. It serves to increase the variety at the command of the Diabetic: and, independently of this, possesses the advantage of presenting an approach to the condition of ordinary bread."

"The LANCET" of June 9th, 1877, under the head of Analytical Records, says —

"We have received from the above well-known maker no less than six different samples of biscuits, etc., intended for diabetic treatment. No. 1 is called the 'Diabetic Biscuit,' and contains much gluten and very little starch. No. 2 is the 'Regent Biscuit,' made from gluten and prepared bran. No. 3 is an 'Almond Biscuit,' and the rest are modifications of the first two. They are excellent preparations; and though, of course, they are not so palatable as if they contained the normal quantity of starch, they can be eaten without difficulty or repulsion. Indeed, it is not easy to see how they could be improved."

The Bread is made fresh every day, and, as has been already noticed, will keep good for a week; a supply can thus be forwarded to any part of the Kingdom. The Biscuits will keep good for almost any length of time, and on this account are well adapted for exportation.

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The new COFFEE AND CRESSINI BISCUITS, now widely recommended by Medical Men, are very agreeable and pleasant.

These preparations have just lately been awarded the Silver Medal, highest award in class, in the Edinburgh Exhibition.

GLUTEN FLOUR, 2/6 per lb. BISCUITS, 3/6 per lb.

LOAVES, 9d. each. BRAN, 1s. per lb.

The LOAVES can be sent through the Post, 1s. each.

It is with much satisfaction that J. Bonthron is able to state that he is now regularly supplying Customers who have used these Preparations for upwards of ten years, and from whom he receives testimony of the great advantage they continue to derive from them.

As Gluten Preparations are costly, and will keep good any length of time, it is cheapest and best to communicate direct with the Maker,

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Stimulation without Reaction.

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BOVRIL was introduced to supply the nourishment so conspicuously absent in these preparations, and this is secured by the introduction of albumen and fibrine (or rather the entire lean of beef), desiccated at a low temperature by special process, and subsequently pulverised to a minute degree of subdivision.

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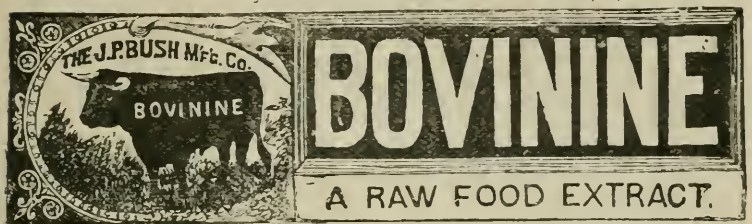

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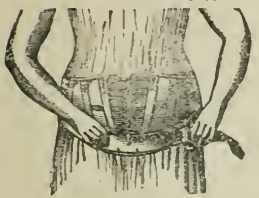

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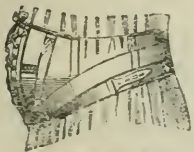

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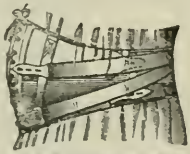

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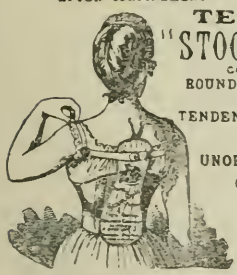

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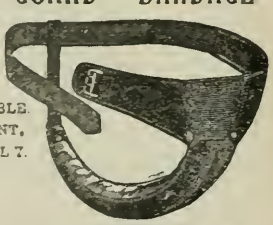

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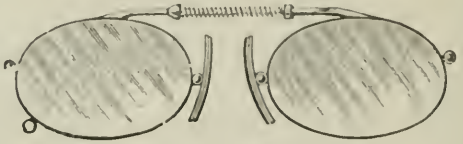

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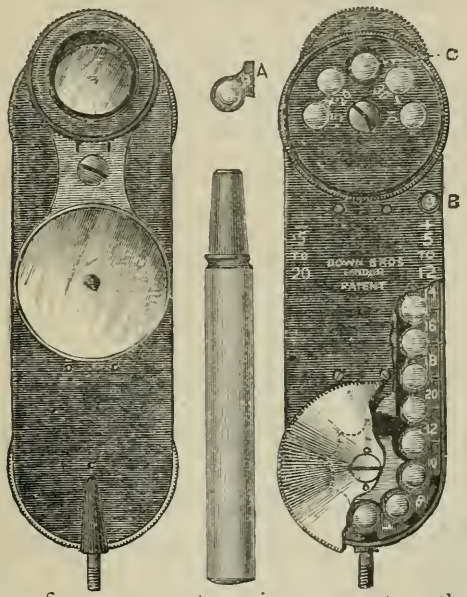

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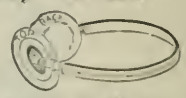

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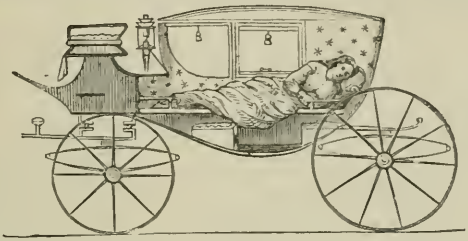

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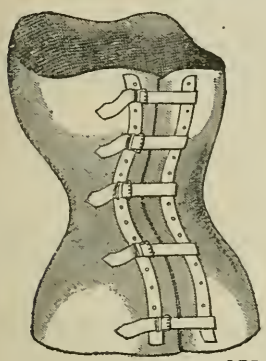
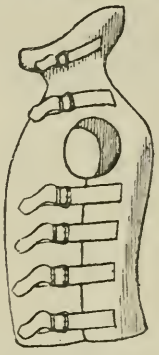


JACKET.



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Designed by
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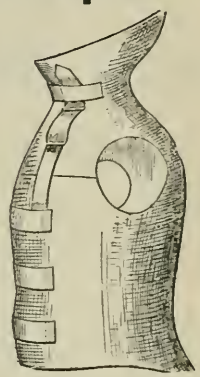

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Length from axilla to great trochanter.

In severe angular cases, circumference over apex of curve, position of same, and contour should be given; in lateral cases a description of the case.

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Same measurements and circumference at neck, and length from centre of neck to axilla.

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FOR ALL DISEASES OF THE KNEE, OR FRACTURE.

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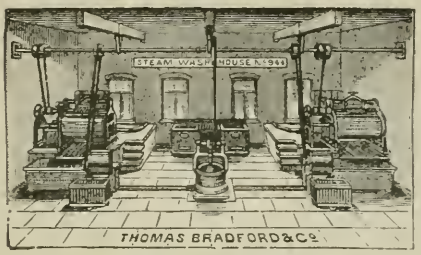

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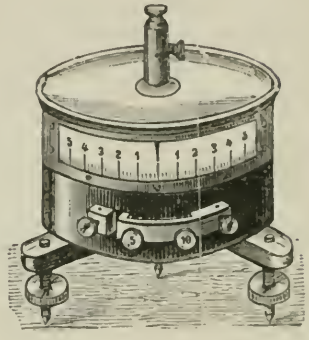

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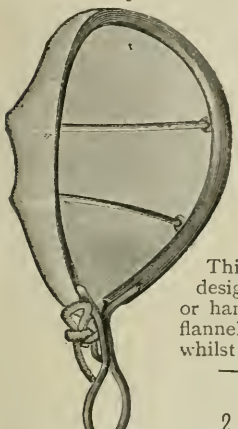

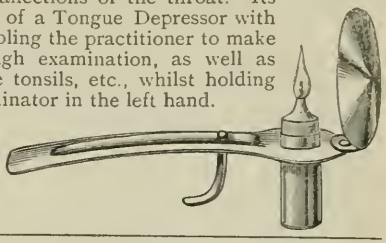

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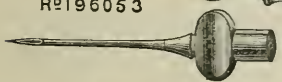

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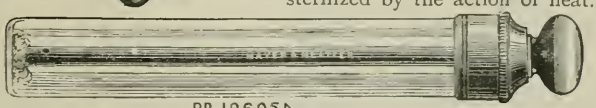

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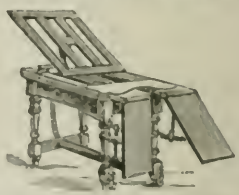

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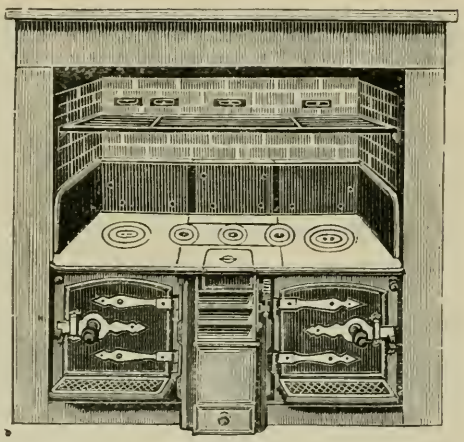

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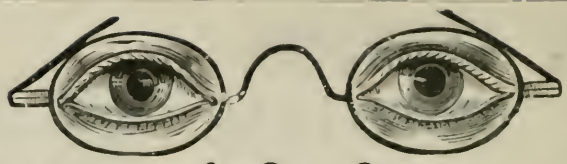

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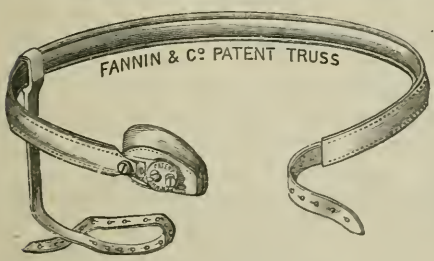

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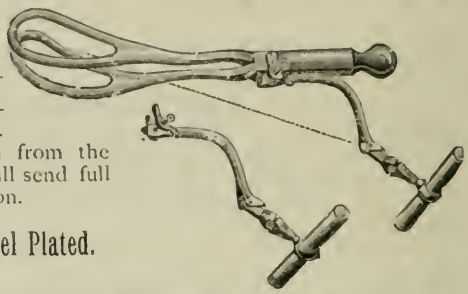

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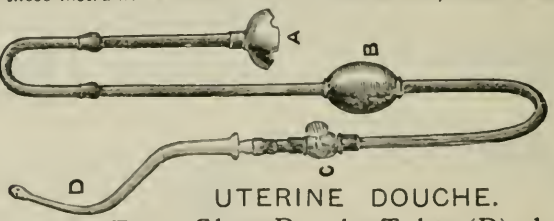

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